Florio, Massimo et al.

**Research Report**

# Support to SMEs - Increasing research and innovation in SMEs and SME development. Final report. Work package 2


# Support to SMEs – Increasing Research and Innovation in SMEs and SME Development

## Final Report
## Work Package 2

*Ex post evaluation of Cohesion Policy programmes 2007-2013, focusing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF)*

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# Final Report

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Centre for Strategy & Evaluation Services

Csil CENTRE FOR INDUSTRIAL STUDIES

ZEW Zentrum für Europäische Wirtschaftsforschung GmbH Centre for European Economic Research

This report is part of a study carried out by a Team selected by the Evaluation Unit, DG Regional and Urban Policy, European Commission, through a call for tenders by open procedure No 2014CE16BAT002.

The consortium selected comprises CSIL – Centre for Industrial Studies (lead partner, Italy), CSES – Centre for Strategy & Evaluation Services (UK) and ZEW – Centre for European Economic Research (Germany).

Subcontracting companies are: CASE – Center for Social and Economic Research (Poland), INFYDE – Información y Desarrollo S.L. (Spain), Visionary Analytics (Lithuania) and WIFO – ÖsterreichischesInstitutfürWirtschaftsforschung (Austria).

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| **BNA** | Bayesian Network Analysis |
| **CIP** | Competitiveness and Innovation Framework Programme |
| **DG REGIO** | Directorate-General for Regional and Urban Policy |
| **EC** | European Commission |
| **EIB** | European Investment Bank |
| **ERDF** | European Regional Development Fund |
| **ESF** | European Social Fund |
| **EU** | European Union |
| **EUR** | Euro |
| **EUROSTAT** | Statistical Office of the European Communities |
| **GDP** | Gross Domestic Product |
| **GFCF** | Gross Fixed Capital Formation |
| **ICT** | Information and Communication Technology |
| **NACE** | Nomenclature statistique des Activités économiques dans la Communauté Européenne |
| **NUTS** | Nomenclature des Units Territoriales Statistiques |
| **OECD** | Organization for Economic Co-operation and Development |
| **OP** | Operational Programme |
| **R&D** | Research and Development |
| **RDI** | Research, Development and Innovation |
| **RTD** | Research and Technological Development |
| **SME** | Small and Medium sized Enterprise |
| **R&D** | Research and Development |
| **TBIE** | Theory-Based Impact Evaluation |
| **UK** | United Kingdom |
| **WP0** | Work Package 0 |
| **WP2** | Work Package 2 |
| **WP3** | Work Package 3 |
| **WP4** | Work Package 4 |
| **WP13** | Work Package 13 |

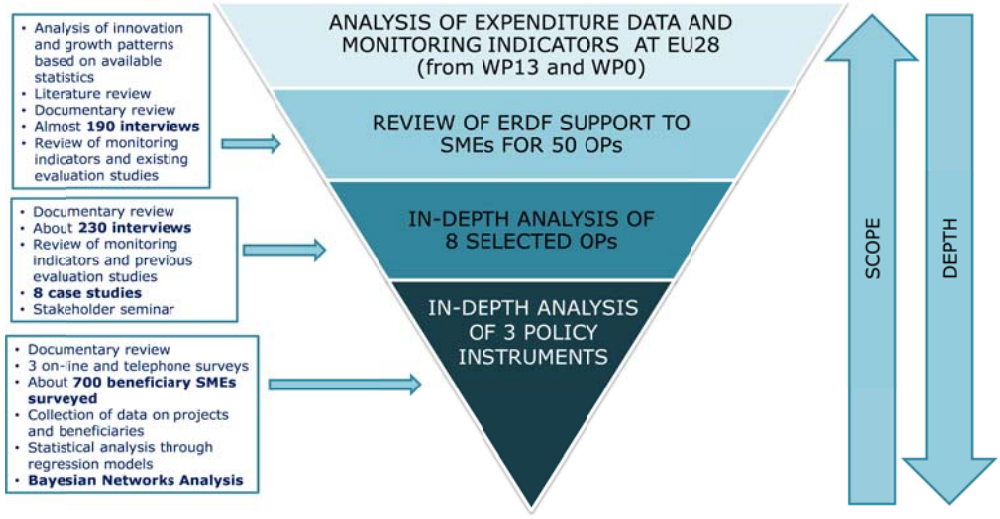
## EXECUTIVE SUMMARY

### OBJECTIVE AND EVALUATION METHODOLOGY

This report presents the main findings of Work Package 2 "Support to SMEs - Increasing research and innovation in SMEs and SME development", part of the ex post evaluation of Cohesion Policy programmes 2007-2013, focusing on the European Regional Development Fund (ERDF). It aims to assess the effects of ERDF support to micro, small and medium enterprises (SMEs) and to outline the mechanisms and context features that explain why and how these effects were achieved.

To fulfil these objectives, an ambitious evaluation methodology, innovative in many ways, was put in place. The evaluation comprised several activities at different levels of analysis, from the EU level to examples of specific Operational Programmes (OPs)[1] and policy instruments.[2] Methodological tools included: a literature review on the rationale and evidence of effectiveness of public support to SMEs, an analysis of the policy instruments addressed to SMEs implemented in a sample of 50 OPs representing 65% of the expenditure addressed to SMEs, a statistical analysis of the regional socio-economic context in which the 50 OPs were implemented, eight case studies of selected OPs, a seminar with representatives of Managing Authorities and external experts and, finally, three theory-based impact evaluations of three policy instruments implemented in different contexts, mobilising direct surveys to beneficiaries and Bayesian Network Analysis. Overall, approximately 400 direct interviews to stakeholders were carried out and 700 questionnaires from beneficiary SMEs were collected.

**Figure 1. Concise features of the methodological framework**




Source: CSIL.

[1] The eight programmes analysed in case studies are: Denmark – Innovation and Knowledge, Germany – Saxony, France – Île-de-France, Spain – Castile and Leon, Lithuania – Economic growth, Poland – Innovative economy, Czech Republic – Business and Innovation, Italy – Apulia.

[2] The three policy instruments subject to in-depth evaluations are: Support for technological innovation in Poland ("Technological Credit"), Aid to investment projects by micro and small enterprises in Apulia, Italy ("Title II"), Support for industrial R&D and innovation in Castile and León, Spain.

## BACKGROUND, GEOGRAPHY AND CONTEXT OF ERDF SUPPORT

***In 2007-2013 substantial support was given by the ERDF to SMEs.***

The volume of ERDF resources invested in programmes supporting SMEs throughout EU Member States and regions during the 2007-2013 programming period was substantial. ERDF support to SMEs amounted to approximately EUR 47.5 billion.[3] This represents 76.5% of total ERDF for business support and 16% of total ERDF allocation during the 2007-2013 period.

***A relatively small number of beneficiary SMEs…***

Around 246,000 beneficiary SMEs were identified. This figure is an underestimation as it refers to about 60% of all ERDF policy instruments identified. It mainly accounts for SMEs that are direct beneficiaries of ERDF support and ignores indirect beneficiaries which are usually not recorded in the monitoring systems. Still, it shows that only a small share of EU SMEs was reached. It is about 2% out of a total of 15.7 million SMEs counted throughout countries and regions subject to this evaluation, but the range is wide: from less than 1% for the Spanish 'Technological Fund' national OP, the French Île-de-France regional OP or the Polish 'Mazowieckie' regional OP, to nearly 10% or more in Lithuania, North Finland and the two Swedish regional OPs of Norra Mellansverige and Övre Norrland.

***… but a large number of policy instruments…***

A total of 670 policy instruments addressed to SMEs were mobilised by the 50 OPs reviewed. Each one benefitted on average 550 SMEs, but with high degree of variability, ranging from one beneficiary of, e.g., instruments that promote eco-innovation in the regions of Hainault (Belgium) and Burgenland (Austria), to 8,000 beneficiaries of a policy instrument in the Spanish OP Technology Fund (support to innovative working methodologies) and 9,000 beneficiaries of the 'Guarantee Fund' in the Italian OP Piedmont.

***…and large differences in the size of investment projects.***

It is estimated that the average volume of ERDF funds directly allocated to each SME was approximately EUR 115,000.[4] The size of investment projects ranged from few thousands Euro (e.g. a minimum of EUR 30,000 for an Apulian instrument aimed to address short-term credit needs of micro and small enterprises) to some millions (e.g. up to EUR 5 million for a Polish instrument co-funding the purchase of modern production machineries, or almost EUR 2 million for an instrument supporting R&D projects in Castile and León). This reflects the different potential roles played by the ERDF.

***A geography of intervention concentrated in major urban areas…***

***…with limited but focused ERDF allocation in some performing regions…***

ERDF support to SMEs is geographically concentrated in major urban areas and large differences exist across Member States and regions in terms of the absolute and relative importance of ERDF support to SMEs. The contexts in which ERDF strategies addressing SMEs were implemented vary along a number of features. There were, on the one hand, well performing regions and innovation leaders, which were affected only marginally by the crisis. They had a rather limited ERDF allocation strongly focused on research and innovation priorities. These were typically Competitiveness regions in Denmark,

[3] ERDF support to SMEs is estimated between EUR 46 billion and EUR 49 billion. This small range of uncertainty depends on which assumptions are made to identify the share of resources actually committed to SMEs under each code of expenditure.

[4] The estimate is based on available data of beneficiary SMEs.

*…and large volumes of ERDF in regions lagging behind.*

Sweden and Finland. On the other hand, there were lagging behind regions with longstanding structural difficulties, which are moderate innovators and were severely hit by the crisis. They received large volumes of ERDF that were often the only source of funding for industrial policies. These were typically Convergence regions in Southern Europe or EU12. In between, a vast majority of cases were characterised by specific combinations of the features above.

## INTERVENTION LOGIC

*OPs mostly refer to the broad goals set in the Lisbon strategy…*

*…and policy instruments are split between two objectives: "growth" and "innovation".*

In contrast to this multifaceted and multiform background, the comprehensive review of 50 OPs and the in-depth case studies show that OPs adopted relatively homogeneous theories of change referring to the generic goals set in the Lisbon strategy. A closer analysis reveals that policy instruments were equally split between the objective of SME growth and that of innovation within SMEs, with little explicit acknowledgement of the different underpinning theories of change. Instead of making clear-cut choices, it was frequent for OPs to adopt dual strategies accommodating both objectives.

*A demand-driven approach was adopted to address the various needs of SMEs …*

*…but sometimes weakening the declared strategic goals.*

A demand-driven approach was generally adopted by the OPs examined to respond to SME needs, which illustrates a reluctance to identify strong strategic priorities. The mobilisation of a large number of policy instruments, amounting to an average of 13 instruments per OP, corresponds to the ambition of Managing Authorities to provide potential beneficiaries with a full complement of support measures, from which, in principle, they could choose. Approximately 50% of policy instruments were used to support investment in fixed assets or R&D activities. But no fewer than 13 different categories of policy instruments were identified, ranging from generic access to finance to more specific goals like support to eco-innovation (3% each). This testifies to the intention of Managing Authorities to tackle all possible obstacles to SME growth and innovation, but it also contributed to obscuring the overall strategic goal of some programmes.

*Two quite distinct logics of intervention were pursued:…*

Notwithstanding such as relative indeterminacy of the theories of change underlying the OPs, during the programme implementation Managing Authorities in fact pursued two quite distinct logics of intervention. By and large, the ERDF was used to complement (or even substitute) national/regional support policies to help SMEs to cope with the effects of the crisis, especially in those regions most severely affected. The ERDF thus performed an anti-cyclical role.

*…anticyclical, by means of generic policy instruments…*

The prevalent pattern of intervention to deal with the effects of the crisis consisted in implementing generic policy instruments aimed at reaching the widest possible number of beneficiaries, with little indication of the target beneficiaries or the specific objectives the instrument was expected to achieve. The budget allocation for this type of policy instrument was sizable, but the individual projects funded were generally small. These instruments had already been devised at the beginning of the programming period, but their use was reinforced during reprogramming.

*…and more selective and ambitious strategies.*

In some cases, the ERDF was also used to engage more ambitious strategies focused on innovative SMEs. To this end, more selective instruments were mobilised, in both more dynamic and less advanced regions. Selective instruments offered support specifically tailored to SMEs needs and closely connected to a vision of the desired changes. Selectivity thus defined does not necessarily imply a small scale of operation.

## POLICY IMPLEMENTATION FEATURES

*Policy instruments were oriented to increasing the main production factors of SMEs…*

Case studies and the theory-based impact evaluations of three policy instruments revealed that, in most cases, policy instruments were oriented to increasing the main production factors of enterprises, such as capital, labour and R&D expenditure. Little attention was dedicated to the final objective pursued or the results expected, for example in terms of increasing exports, productivity or total sales.

*… with low-tech / micro enterprises being the majority of beneficiaries.*

The large majority of beneficiaries were micro-enterprises (54%, while 30% were small enterprises and 16% medium enterprises). Almost half of them were in the manufacturing sector (44% as against to 16% in retail and wholesale trade) and belonged to sectors classified as low-tech (56%). This indicates that the majority of instruments implemented supported the catching up or survival of SMEs in traditional sectors rather than promoting existing growth and innovation poles.

*A refined analysis at OP level shows the existence of sophisticated forms of intervention…*

A rather conservative picture emerges from an aggregate analysis of 50 OPs, but it actually hides more sophisticated forms of intervention. For example, even if a shift from non-repayable to repayable aid was observed, grants remained the most common form of delivery. Simple grants represented almost half of the policy instruments identified, i.e. a public contribution of more than EUR 12 billion already paid. These forms of delivery are commonly considered to be traditional and less innovative than financial instruments. However, case studies reveal that, in different cases, the latter were used to disburse funds easily and to provide SMEs with liquidity without further specifications. On the face of it, the prevalence of grants often concealed hybrid and more complex forms of support. For instance, 22% of all instruments identified involved a combination of different modes of support, typically grants with technical assistance and consulting services, or grants with loans. This is indicative of the ability of the Managing Authorities to adjust the form of support tailoring it to the specific SMEs needs to be addressed.

*…indicating the ability of Managing Authorities to tailor the support to SMEs needs…*

*…and highlighting a process of self-selection involving more capable SMEs.*

In the same vein, policy instruments generally did not explicitly target specific types of SMEs through formal selection criteria: only 7% of the sums engaged by the identified policy instruments were addressed to SMEs in specific sectors. However, case studies highlighted a process of self-selection or "soft targeting" in which a specific set of beneficiaries (generally characterised by greater absorptive capacity) was *de facto* targeted through the very design of a given policy instrument. For example, in the case of grants for strategic productive investments of a certain financial threshold, the

more capable SMEs (usually small or medium-sized ones) were automatically involved.

## MAIN ACHIEVEMENTS

***The ERDF helped withstand the crisis in severely affected regions.***

An overarching achievement of the ERDF over the 2007-2013 programming period is that it helped SMEs withstand the crisis in particular in those regions most severely affected (in the sample of OPs subject to in depth case studies: Apulia, Castile and León, Lithuania and to some extent the Czech Republic). The ERDF provided a significant source of funds, sometimes palliating a decrease in national public support as, for example, in the Southern Italian regions. This helped targeted SMEs to cope with the credit crunch and actually supported the accumulation of fixed capital and the development of innovation activities. The ERDF enabled SMEs to survive or preserve pre-crisis levels of investment and employment.

***Positive effects were widespread, especially in Convergence regions.***

The effects of the strategies aimed at mitigating the impact of the crisis were widespread, especially for Convergence regions. For example, the Bayesian Network Analysis conducted on the policy instrument which absorbed the largest share of funds of the OP Apulia, shows that the instrument achieved its intended objective of increasing the enterprises' resilience to the crisis (as declared by 82% of surveyed enterprises) and limiting the risk of unemployment among the beneficiaries: around 12% of beneficiaries have decreased their employment during the years of implementation of the investment, while more than 40% have either maintained the same number of employees or have hired new employees.

***In some cases structural changes may have been postponed because of the ongoing crisis…***

The ERDF can afford to play a more stabilising role when large budget envelopes are available and economic conditions are particularly severe. However, whether this strategy eventually impaired or postponed structural change remains an open question beyond the remit of this evaluation. It could be argued that the crisis offered an ex-post justification for strategies that lacked a strong strategic focus at the beginning of the programming period. But this can hardly be generalisable.

***…but the ERDF also fostered real changes in SMEs…***

A stabilisation and anti-cyclical strategy was not the only option for the ERDF. The analysis shows that more ambitious and potentially more structural effects also developed. In these cases, ERDF interventions fostered dynamics of change within targeted SMEs.

***…materialising in direct economic effects…***

Changes were recorded in terms of economic performance. For some SMEs the contribution of the ERDF was important because it accelerated or anticipated their investment plans. The ERDF contributed to maintaining levels of investment, accelerating their realisation or increasing their magnitude. Selected evidence illustrates that the ERDF played a catalytic role in supporting the strategic investment plans of EU SMEs, thus helping SMEs to increase turnover, profitability and exports.

***..and/or behavioural changes.***

Also, the ERDF support triggered specific changes in the way SMEs do business. Some of them were more easily observable and measurable

(such as employing a young researcher, or purchasing technologically more advanced equipment), others pertained to the entrepreneur's mindset, for instance his/her willingness to take risks and innovate.

For instance, the instrument providing a grant for R&D to SMEs in Castile and León was particularly ambitious in terms of expected behavioural change: its aim was to increase SMEs' capacity to implement increasingly complex R&D projects and their propensity to carry out collaborative projects. The Bayesian Network Analysis indicates that behavioural changes were slowly taking place and effects were more evident among enterprises, which already had longer experience with R&D projects.

***Behavioural change takes time to stabilise…***

While combined evidence from the case studies and the Bayesian Network Analysis suggests that some policy instruments contributed to accompanying beneficiary enterprises along a path of change and learning, it also shows that this process takes time before stabilising and producing observable economic effects. The behavioural changes that the ERDF contributed to fostering in some sets of SMEs may or may not have translated into improved economic performance, depending on whether the first steps were followed by further steps consolidating the new behaviour into an acquired practice contributing to strengthened competitiveness or innovativeness, and eventually structural change.

***…but it could be the real added value of ERDF.***

Thus, the analysis shows that the most significant change triggered by the ERDF could be in the form of behavioural changes in attitudes and approaches to doing business rather than in the immediate materialisation of economic results. Such behavioural changes are capable of eventually shifting SMEs from their initial trajectories and producing deep structural effects. Also, especially when target SMEs were embedded into clusters or local production systems, there was evidence that such positive effects spread to other SMEs or enterprises that were part of these very systems, through spill-over or demonstration effects.

## CONDITIONS OF EFFECTIVENESS

***Selective policy instruments targeted to more capable SMEs yielded the most positive effects.***

It was the mobilisation of selective policy instruments that yielded positive effects in terms of economic performance, innovativeness and behavioural change. Beneficiary SMEs recording these positive effects were generally SMEs that already had the capacity to grow and innovate and that were receptive to policy *stimuli*. They had the necessary managerial capacity to actually turn awareness, intentions and the first changes in organisation or strategies into a durable programme of actions. For example, the analysis of the Bayesian Network referred to the Polish policy instrument 'Technological Credit' shows that low or medium-low tech enterprises can significantly benefit from investment in technological development, but that already exporting SMEs were more ready to take advantage of the investment and to build a competitive advantage on innovation.

***Implementation conditions tailored to SMEs' specific needs…***

Some specific implementation conditions helped to enhance the effectiveness of these instruments. For example, the combination of policy instruments that lent themselves to strategic and to *sui generis*

use, the modulation of aid intensity or the choice of the appropriate mode of delivery according to the degree of risk associated with the project (e.g. grants for risky projects and loans for less risky projects) were all ways of better targeting the expected results.

***…accompanying measures…***

It was also important that the policy *stimuli* were not limited to one single intervention, but were developed over time to accompany and enhance the behavioural changes that occur in sequence.

***…and result orientation helped to enhance the effectiveness of policy instruments.***

The result orientation of the intervention logic addressing specific expected changes was also associated with more effective instruments, compared to a logic aimed at providing more generic support for input adoption. Good practices were observed in this regard, for example, with the implementation of conditional grants committing beneficiary SMEs to well-defined expected changes (for example in terms of employment creation or preservation).

***Intermediaries were often at the centre of the conditions of effectiveness…***

Intermediaries of different types (e.g. regional development agencies, chambers of commerce, cluster managers, etc.) and with different roles (e.g. implementing agency, fund manager, service provider, etc.) were often at the centre of the conditions of effectiveness defined above. Intermediaries were mobilised for 37% of the policy instruments, i.e. 28% of the public contribution already paid out.[5] Some of them played a decisive role in accelerating fund absorption, reducing the time and administrative costs to access funds, and in accompanying beneficiary SMEs in developing and implementing their investment strategies. The quality and intensity of interactions and dialogue between the intermediary/implementing authorities and beneficiary SMEs was an important factor strengthening the effectiveness of selective policy instruments.

***…thanks to their knowledge of SMEs and context specificities.***

To different extents, they had the necessary local knowledge of both SMEs specificities and the socio-economic and institutional context in which SMEs operate, which gave them strong advantages when it came to devising and/or implementing policy instruments. Much depended, in fact, on their capacity to act as a strategic partner in the implementation process as opposed to an efficient enabler of fund disbursement.

## LESSONS LEARNED

***Theories of change should recognise the importance of promoting behavioural change…***

The findings of this evaluation show that sounder theories of change should underlie Operational Programmes. On the one hand, theories of change should acknowledge the added value of ERDF. Besides the short-medium term economic effects on employment and/or competitiveness, the mechanisms whereby the ERDF can make a qualitative difference are in the form of incremental behavioural changes eventually spreading both in width and depth, and potentially leading to deeper restructuring processes.

***…and rely on deep knowledge of the context features.***

On the other hand, theories of change should be firmly anchored to the characteristics of the local context in which they are implemented. In particular, theories of change must adequately deal

[5] These figures exclude implementing bodies.

with the trade-off between two extreme strategic options, i.e. concentrating on a few good performing and innovative SMEs vs. reaching large sets of less competitive and more traditional SMEs. To do this, they should go beyond the traditional dichotomy between low tech vs. high tech and innovation vs. growth objectives. Instead, an ingenious targeting strategy should extend beyond the usual mechanical selection processes based on size, sector or accounting criteria, and refer to SMEs' embeddedness in the local context while taking into account their level of absorptive capacity.

***Targeting strategy should extend beyond a selection based on size, sector or accounting criteria.***

In turn, theories of change must translate into a coherent set and well calibrated number of policy instruments fulfilling conditions of effectiveness, e.g. in terms of selectivity and complementary measures (dialogue, coaching etc.) to improve SMEs uptake.

***The recourse to capable and properly selected intermediaries should be intensified.***

More frequent recourse to intermediaries with an in-depth knowledge of local specific conditions can be a solution to help devise and implement a more strategic and place-based approach to ERDF strategy. This poses the question of their ability to steer such a process and therefore of their selection. It also requires a governance system that is less centralised around the Managing Authorities.

***Monitoring and evaluation should be adapted.***

Monitoring and evaluation should be adapted to the role played by the ERDF in supporting SMEs as defined above; in particular, the choice of indicators should be better aligned with the added value of ERDF. This calls for the development of measurement systems suitable for reporting and assessing the implementation and level of achievement of policy instruments, based on observations collected at firm level.

***A risk-taking attitude should be encouraged.***

Overall, a risk-taking attitude should be encouraged if Managing Authorities are to engage into more selective strategies. The ERDF can play an important role in providing a laboratory for experimenting and developing innovative tools and practices rather than replicating well-established and generic mainstream national schemes. The ERDF should be seen as a trendsetter financing pilot schemes and relatively large-scale field experiments, and promoting more innovative interventions aimed at addressing path dependencies and capable of shifting SMEs from their trajectories. Concrete examples were found throughout the case studies, like the Living labs experience in Apulia, Inno-vouchers in Lithuania, or the promotion of social innovation in numerous OPs.

***Some improvements have already been made in the 2014-2020 programmes.***

Some of these issues were addressed in the subsequent programming period (2014-2020). For example, the "smart specialisation" approach invites policymakers to openly adopt place-based strategies. Also, stronger strategic guidance is expected from the enhanced dialogue between the European Commission and national/regional authorities around Partnership Agreements where clear strategic choices are to be spelled out. Likewise, monitoring systems evolved considerably with improvements in monitoring arrangements and a better definition of the respective roles of monitoring and evaluation.

# 1 BACKGROUND AND CONTEXT

Innovation and growth in SMEs across Member States and regions is a high priority in the EU's overall policy agenda and in particular in EU Cohesion Policy. Supporting SMEs in their development, especially in relation to their innovation performance, is considered to be instrumental in increasing regional competitiveness and employment (European Commission, 2014a).[6]

In order to understand to what extent ERDF programmes were designed to cope with the key challenges affecting SMEs over the period under consideration, this chapter provides a concise description of the relevance of SMEs to regional competitiveness in the EU, the drivers of change and the performance of SMEs. The main messages of this section are the following:

- SMEs provide a unique contribution to regional employment and competitiveness but their heterogeneity (in terms of sector, size, level of technological intensity, and the production and innovation system in which they are embedded) calls for specific and tailored efforts when targeting them;
- The global financial crisis had a profound impact on SMEs in the EU, although to different extents and with differing degrees of severity across regions and sectors;
- Innovation is a key driver of SMEs' competitiveness but EU regions are at different stages of development in terms of innovation capacity.

## *1.1 SMEs heterogeneity calls for special efforts when targeting them*

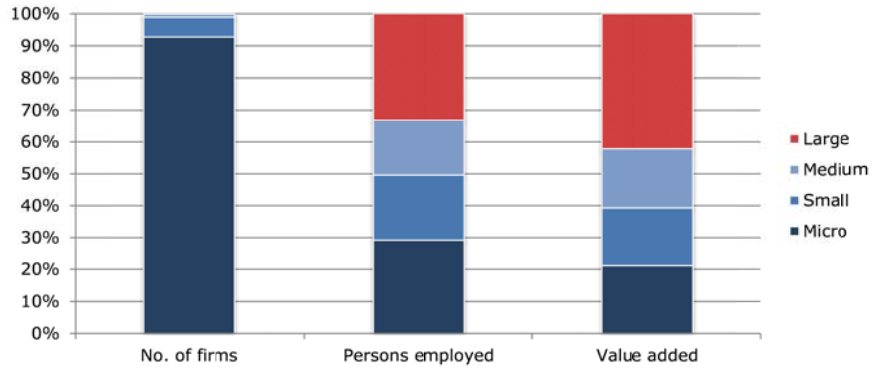
SMEs constitute the backbone of the European economy, providing a significant source of jobs and economic growth.[7] According to the latest European Commission annual report on European SMEs (2015a), as of 2014 there were **more than 22.3 million SMEs throughout EU28, representing 99.8% of the total number of firms in the EU. They generate almost 57.8% of the total value added and employ almost 90 million people, i.e. 66.9% of the total number of employees in the business sector.**

When generally referring to SMEs, it should be borne in mind that 90% of this category consists of micro firms, including one-person firms, and these employ slightly less than one third of the workforce in the business sector (half of them in the wholesale and retail, construction or real estate sectors). The different size classes of SMEs, however, provide a similar contribution to the added value of the business sector.

The share of SMEs of the total number of enterprises and the employment and value added that they generate vary across countries, and they are higher in the Southern countries of the EU. Out of the total population of European enterprises operating in the 'manufacturing' sector, SMEs account for 44% of value added and 59% of employment. SMEs' contribution to value added and employment is more significant in construction and services such as 'wholesale and retail trade and repair', 'business services', and 'accommodation and food'. More specifically, SMEs account for more than 80% of the total value added and employment in the 'construction' sector, and between 68% and 83% in 'wholesale and retail', 'accommodation and food' and 'business services'.

[6] 'Enhancing the competitiveness of SMEs' is one of the 11 thematic objectives for Cohesion Policy in 2014-2020. See Regulation (EU) No 1303/2013.
[7] http://ec.europa.eu/growth/smes/.

**Figure 2. Number of enterprises, employment and value added by size – EU28 (2014)**




Source: CSIL based on data contained in European Commission (2015a).

**Besides being a vital source of job creation and production, SMEs are also a fundamental driver of innovation and competitiveness**. Flexibility, dynamism, high degrees of specialisation and local integration are fundamental assets of SMEs, which make them, in principle, well equipped to adapt to the new terms of international competition and to respond to changing market conditions, evolving consumer preferences, shortening of the product cycle and other economic challenges (Moore and Manring, 2009).

However, their small size can also significantly limit their innovation and development potential, as extensively discussed in the First Intermediate Report of this study. In general terms, the factors explaining the difficulty SMEs face in their efforts to innovate and grow, which were explored extensively by past studies (e.g. European Parliament, 2011; CSES, 2012; European Commission 2008; OECD, 1998) can be related to various market failures. **Traditional obstacles faced by SMEs include: (a) limited access to resources**, understood in terms of financial, information and human capital; **(b) organisational constraints**, such as lack of time, quality and forward-looking ownership and management, and inertia in relation to behavioural change; **(c) scarce ability to shape the external environment**, but higher dependence on it with less bargaining power.[8]

SMEs' size and sector do matter when assessing the performance of SMEs and their barriers to growth. For instance, there is evidence that the level of export activity and export capacity increases with firm size (European Commission, 2014b, 2015b), as smaller firms usually have fewer resources in terms of financing, knowledge and managerial experience (European Commission, 2014c, 2014f).

As regards sectors, all the service sectors recorded positive average annual growth rates between 2008 and 2013, while the majority of the traditional sectors such as 'construction of buildings', 'manufacturing of wearing apparel', 'manufacturing of other non-metallic mineral products', 'printing & reproduction of recorded media', and 'manufacturing of furniture' declined over the same period. Some of the most successful sectors were those that are knowledge-intensive, such as 'Activities of head offices and consultancy', 'Scientific research & development', 'Information service activities' (European Commission, 2015a).

Therefore, it is misleading to paint a generalised picture of SMEs' intrinsic potentialities and the recurrent market failures hampering their innovation and growth. This is especially true when looking at specific territorial productive systems. Context analyses carried out at the national and regional level reveal that **patterns of SME performance are usually less clear-cut**

[8] For a more extensive review of the market failures hampering SMEs' growth and innovation, see the First Intermediate Report.

**and call for an in-depth understanding of the vocation of the firms beyond aggregate stylised facts**. Other important dimensions are, for example, their governance structure (whether they are run by an owner-manager or executive managers), their entrepreneurial orientation, the nature and extent of relationships with other firms or actors within the territory, their specialisation in a specific stage of the value chain or in a niche product or in the supply of an intermediate product or components to other (often large) firms (see the literature review contained in the First Intermediate Report for a more in-depth discussion). As noted by the literature, high-growth firms, often referred to as 'gazelles', tend to be small and relatively young firms, but they can be found in all industries and sectors.

The ERDF acknowledges the existence of profound differences across regions in their investment needs, characteristics and potential to develop. In order to reinforce economic, social and territorial cohesion and reduce intra-EU imbalances, the ERDF provides support for the development and structural adjustment of regional economies, including lagging-behind regions, and the conversion of declining industrial regions. The overarching goal of EU industrial policy is to support structural change in European industry towards more high-tech activities, by adopting a forward-looking approach and encouraging regions to increase their competitiveness and develop their ability to innovate, so as to fulfil the objectives set out in the Lisbon strategy and subsequently (European Commission, 2004).

If in 'Convergence' regions the ERDF is more focused on promoting the modernisation and diversification of economic structures and the creation and safeguarding of jobs,[9] in 'Regional Competitiveness and Employment' regions[10] the ERDF more strongly prioritises the promotion of innovation and the knowledge economy.[11] According to Article 9(3) of the Council Regulation (EC No. 1083/2006), over the period 2007-2013 the Commission and the Member States were required to ensure that 60% of expenditure for the Convergence objective and 75% of expenditure for the Regional Competitiveness and Employment objective for all Member States[12] be earmarked for investment. This was in keeping with the re-launched Lisbon agenda focusing on competitiveness, research and development, energy efficiency and human capital. In 2008 these targets were increased to 65% for the Convergence objective and 82% for the Regional Competitiveness and Employment objective, with variations across Member States and regions.[13] For EU12 Member States there was, however, no legal obligation to earmark expenditure.

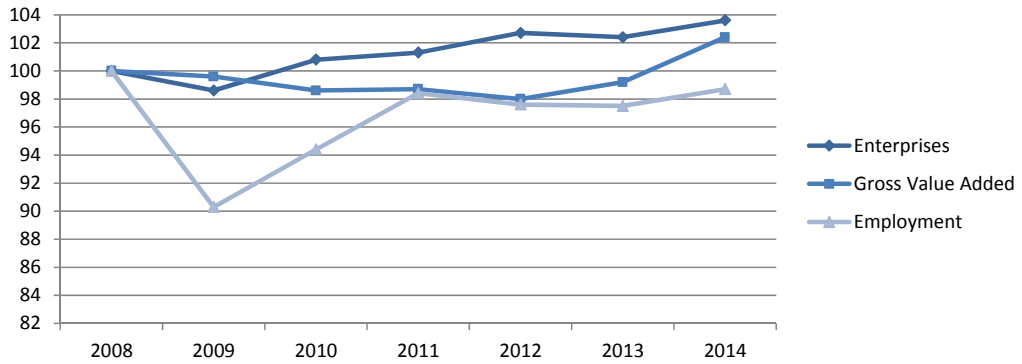
### *1.2 The impact of the economic crisis on SMEs performance*

**The programming period under assessment was characterised by an unprecedented global crisis** that severely affected regional economies in most of the EU countries. In the aftermath of the economic crisis, the total number of SMEs dropped, as well as their level of employment and their value added. From 2009 onwards, the value added began to recover, although at a slower pace than previously. In contrast, the level of employment continued to decline over the years. Another downturn was recorded in 2012, which was followed by a return to growth in 2013 and 2014. While SME value added showed a modest increase in 2013 and finally exceeded the pre-crisis level in 2014, the level of employment among SMEs

[9] Art. 4 of Regulation (EC) No. 1080/2006.
[10] Convergence objective regions are those with an average GDP per capita below 75% of the EU average. Regional Competitiveness and Employment objective regions are those with an average GDP per capita above 75% of the EU average.
[11] Art. 5 of Regulation (EC) No. 1080/2006.
[12] These targets had to be ensured over the entire programming period.
[13] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the results of the negotiations concerning cohesion policy strategies and programmes for the programming period 2007-2013. Brussels, 14.5.2008, COM(2008) 301 final.

followed a slow decline over the period 2008-2013 and only in 2014 saw a slight reversal of the trend.

**Figure 3. Percentage change in number of SMEs in the non-financial business sector, employment and value added (in real terms) generated by SMEs – EU28 (2008 base year)**




Note: Slovakia is excluded due to a break in the series. Changes in the number of enterprises can also depend on changes in the system for classification of SMEs by National Statistical Offices.
Source: CSIL based on European Commission (2015a).

Aggregate data at the EU level hide significant differences across countries. Actually, over the period 2007-2014 GDP growth (in real terms) varied markedly across EU28. Notably, Convergence regions (Spain and Greece in particular) were hit more severely than the rest of EU15. By contrast, EU12 all showed growth over the same period, with the exception of Estonia, the Czech Republic and Slovenia.

**Differences in structural factors and macroeconomic performance explain** not only cross-country and cross-regional **differences in both the value added performance and the employment creation of SMEs since 2008, but also significant differences in the extent of the recovery**.

While within EU28 as a whole, SME valued added showed growth in 2014, this situation was not shared by all Member States. In fact, the SME sector in 18 Member States showed positive value added growth of at least 1.5% in 2014; in the remaining Member States, however, SME valued added achieved only very marginal positive growth (in the case of Spain, Finland, France and Luxembourg) or showed a decline (in the case of the Czech Republic, Cyprus, Greece, Croatia, Italy and Sweden).

In terms of employment, the overall net change in SME employment was negative in EU28 as a whole between 2008 and 2014, particularly for eight Member States (Spain, Cyprus, Hungary, Greece, Italy, Latvia, Lithuania and Portugal) which experienced double-digit net employment losses. Conversely, another eight countries (Austria, Belgium, Germany, France, Luxembourg, Malta, Sweden and the UK) showed positive SME employment net growth over the same period.

Although the majority of SMEs are not active in export-oriented sectors, in most Member States the strongest growth and recovery between 2008 and 2014 were recorded by exporting SMEs. Moreover, there is evidence that SMEs operating in knowledge-intensive services increased employment more than others. Conversely, decreasing gross fixed capital formation, which includes all investments in fixed assets such as housing, infrastructure, buildings and machinery, substantially dragged down economic growth in the construction sector and, to a lesser extent, also in manufacturing and, according to future projections, it will continue to lag behind in the coming years. In terms of recovery, the business services sector is the best

performer, considering its value added, employment and the number of SMEs at EU28 level. In particular, value added in this sector grew by more than 5% in 2014 with mean values ranging from 2.7% to 4.3% in the other sectors (European Commission, 2015a).

In the context of the unparalleled downturn in the economic cycle, the ERDF programmes were required to cope with the pressures on SMEs brought about by the crisis. Ensuring adequate support to private investment, in particular for risky ventures such as research and development projects, was a challenge. In many cases the crisis led to a downsizing of the initial ambition of fostering structural change and competitiveness, as is thoroughly discussed in the following chapters.

### *1.3 Different innovation systems at EU level*

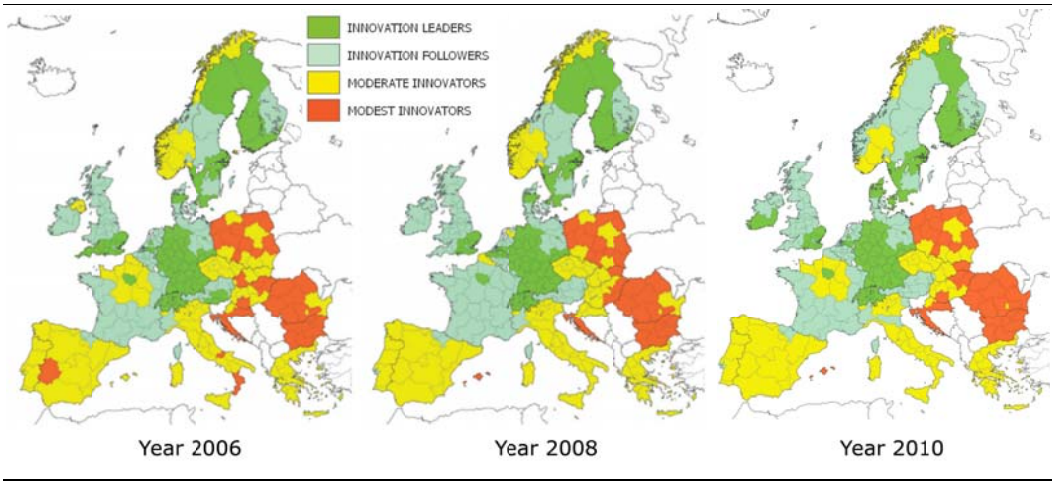
The capacity to innovate is recognised as one of the main drivers of growth and a crucial ingredient in SMEs' ability to resist and react to severe macroeconomic imbalances and market uncertainty.[14] A positive relationship between changes in SME value added and the intramural R&D expenditure of the business sector is observed during the 2008-2013 period,[15] which suggests the important role that technological progress and innovation may have played in the aftermath of the economic crisis. The literature investigating the relationship between firm innovation strategies and the crisis[16] shows that the average firm reduced expenditure on R&D and innovation as a result of the economic crisis, but a number of firms, regardless of their sector, reacted in the opposite way by increasing their investment in activities like in-house R&D, purchase of R&D services, technology licensing, design and marketing, and training aimed at developing new goods and services. These are usually start-ups and firms in which continuous innovation is the main competitive advantage. As shown by the analysis of regional data, regions in France, the Netherlands, Denmark, Germany, Northern Italy, Austria, the Czech Republic, Slovakia and Poland recorded positive variations in terms of both R&D expenditure and value added. Nevertheless, the disparity between these and other EU countries and within the same countries can be very high. For instance in Romania R&D grew by 91% in the North-West area, while it decreased by 64% and 97% in West and East Romania, respectively.

**The heterogeneity of firms' innovation capacity and the extent to which innovation can drive firm competitiveness and resilience to the crisis are strictly linked to the innovation potential of the territory within which the firm is embedded**. In fact, a variety of innovation potential exists at both EU and country levels. This variety is due to different production structures, sectors of specialisation, types of innovation actor, capacities for knowledge creation, transfer and exploitation, and other place-based structural conditions and explains the differences in innovation potential and the strategies pursued by regional and national governments.

A picture of the variety in regional innovation capacity across the EU is obtained by comparing data from the latest available Regional Innovation Scoreboard (European Commission, 2014d) which ranks regions in terms of their performance against a set of indicators of innovation and provides the performance changes over time (see Figure below).[17] Data reveal that there is an innovation divide between the Northern and Western European countries and those in the East and South; and that this persists over time, but also that substantial intra-country differences exist in regional innovation performance.

[14] European Commission (2014b), Rosenbusch et al. (2011), Hall, B.H. (2011).
[15] For details on this see the analysis presented in the First Intermediate Report.
[16] See *inter alia* Antonioli et al. (2011) and Archibugi and Filippetti (2011).
[17] The Regional Innovation Scoreboard 2014 applied the same methodology, as far as it was possible, to Member State and regions. It ranked countries and regions in four classes, distinguishing between 'leaders', 'followers', those with a moderate 'performance' and those 'catching-up' in terms of innovation performance.

**Figure 4. Clusters of EU regions by level of innovation performance – 2006, 2008 and 2010**




Source: European Commission (2014d).

The crisis did not significantly alter the relative position of the great majority of EU regions. Those regions that showed strong innovation capacities and performance before the crisis maintained their advantage during and even after it (e.g. regions in Germany, Denmark, Sweden and Finland), while regions with more limited innovation capacities continued to face difficulties (e.g. regions within EU13 and even regions of Southern European countries). In these areas the crisis could have caused significant constraints limiting their capacity to make a leap forward and increase innovation. However, a small number of regions managed to improve their positions (e.g. the South Italian region of Calabria and the Spanish region of Extremadura); while a few others witnessed a decrease in in-house innovative activities by SMEs following the crisis (e.g. regions in South Austria and South West England). The same patterns can be highlighted if specifically analysing the innovation behaviour of SMEs in these regions (data from 2007 to 2014 can be compared), confirming that the most innovative SMEs are found in several regions in Germany, the United Kingdom and Denmark, along with some regions from other countries such as France, Italy, Sweden, Finland, Belgium, Ireland and Portugal.

The 'innovation' position of regions/countries is triggered by different drivers. Results from the correlation analysis contained in the Regional Innovation Scoreboard Report (2014) suggest that the Regional Innovation Index is higher in regions that have a larger share of the population, that participate in continuous training and learning activities, that have a larger share of households with broadband access, and that have the benefit of more public funds for innovation. Other factors such as institutional and infrastructural conditions, business climate for entrepreneurship, and location of research infrastructures within the regional boundaries are likely to be important in explaining the innovation performance of a region.

Overall, the increasing role of knowledge and innovation as drivers of competitiveness has offered SMEs new opportunities to develop and flourish, but the majority of them still face structural difficulties in following an innovation and growth path. Different territorial features have important implications for SMEs' innovation capacities and these cannot be neglected. They should be acknowledged by policymakers when designing support measures for SMEs.

## 2 METHODOLOGY AND ROBUSTNESS OF THE FINDINGS

The challenges faced when evaluating ERDF support to SME growth and innovation are the result of:

- the huge number and wide variety of SMEs throughout the EU, in terms of size, sectors, technological intensity and other characteristics;
- the diversity of possible barriers preventing SMEs from developing and innovating;
- the strong link with context-related variables that explain their behaviour, needs, capacities and performance;
- the variety of strategies that the ERDF may pursue to tackle SMEs needs and stimulate a change.

To address these challenges an ambitious evaluation methodology was put in place, which was innovative in many ways. It involved the deployment of the theory-based impact evaluation approach, never previously used to evaluate EU business support, and an original technique for processing micro-level data on beneficiary SMEs that was suitable for investigating the way that the ERDF affects SMEs performance. This is a Bayesian Network Analysis.

### *2.1 Theory-based impact evaluation*

The evaluation was designed primarily to **assess the effects of ERDF support on SMEs, but also to outline the mechanisms and context features that explain why and how these effects were achieved**. To do so, the ex-post evaluation was carried out according to the principles of Theory-Based Impact Evaluation (TBIE).

TBIE is a well-established methodology (Astbury and Leeuw, 2010; Weiss 1997; Carvalho and White, 2004; Blackman and Reich, 2009) that makes explicit the underlying logic (or theory) of the intervention under assessment, and explores the assumptions and causal relations that determine the generation of certain effects, whether desired or undesired, expected or unexpected. **Effects can be intended in terms of both economic outcomes** (e.g. increase in turnover, employment, etc.) **and changes in the patterns of behaviour** of SMEs, which in turn may be linked to possible future economic outcomes.

Theory-based evaluations of programmes supporting business are rare and the applicability of this method in this field has so far been relatively unexplored (Riché, 2012). As such, this evaluation study attempts to test the suitability of a new evaluation approach in the still unexplored field of business support programmes.

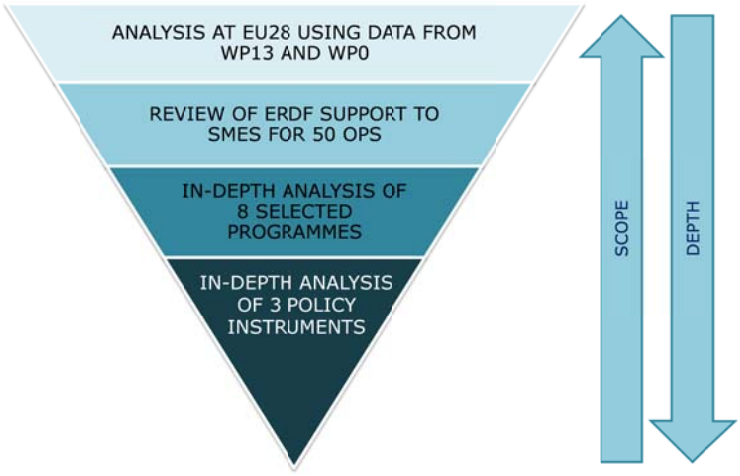
Of the various theory-based methods existing, the Realist Evaluation paradigm (Pawson and Tilley, 1997 and 2004) was chosen as a reference, since it offers the advantage of taking into account the context (socio-economic, institutional and cultural frameworks) when exploring if and how certain effects generated by the intervention are achieved. This is particularly important when dealing with EU policies supporting SMEs, since i) ERDF interventions take place in highly diversified contexts and ii) SME performance is influenced to a great extent by "place-based" assets, as shown in the previous section.

The principles of TBIE were applied to the entire evaluation study, which encompassed different levels of analysis. While remaining under the general framework of TBIE, each level was, however, associated with different evidence bases, methods of data collection and processing, evaluation outputs and constraints. They are presented in detail below.

### *2.2 Levels of analysis*

The evaluation took a funnel approach, from the general to a specific level of analysis. It started from an analysis of expenditure and monitoring indicators from WP13 and WP0 respectively, that were related to SMEs and business support throughout the whole EU. A comprehensive review of ERDF support to SMEs was then carried out, relying on the analysis of 50 Operational Programmes (OPs). The analysis continued by digging into the logics and effectiveness of the policy mix embedded in eight selected OPs, for which the same number of case studies were developed. Finally, three particularly significant policy instruments implemented in three different contexts were evaluated by means of direct surveys of beneficiaries and the statistical processing of the information collected.

**Figure 5. Levels of analysis**




Source: CSIL.

In addition, two cross-cutting activities were carried out: the literature review and the analysis of the context. The information yielded by these activities was used as a starting point for each of the three levels of analysis. In particular, the literature review contributed, on the one hand, to setting out the analytical framework underlying the development of the rest of the study (i.e. drivers of change for SMEs and types of policy instruments); on the other, it contributed to identifying the patterns of intervention logic underlying ERDF SME support.

The context analysis focused on three dimensions, namely the regional and national socio-economic characteristics, research and innovation potentials, and industrial environment, with specific reference to SMEs. At the first level of analysis a description of the local context at the beginning of the programming period was provided together with an analysis of the context dynamics identifying growth and innovation trends in enterprises during the programming period. With a similar aim, an analysis of the regional context was performed on the areas where the eight selected OPs and the three policy instruments were implemented.

The main features of the three levels of analysis are summarised in Table 1; additional details are provided in the sections that follow.

**Table 1. Concise features of the three levels of analysis**

| Level of analysis | EU level: 50 OPs | Programme level: 8 OPs | Policy instrument level: 3 instruments |
|---|---|---|---|
| **Evidence base** | - Statistics at national and regional level<br>- Literature<br>- Programming and implementation documents<br>- Interviews with almost 190 policymakers, implementing bodies and experts<br>- Monitoring indicators<br>- Previous evaluations and studies | - Programming and implementation documents<br>- About 230 interviews with policymakers, implementing bodies, experts, SMEs and other stakeholders<br>- Monitoring indicators<br>- Previous evaluations and studies | - Programming and implementation documents<br>- Interviews with policymakers, implementing bodies and experts<br>- Surveys of about 700 beneficiary SMEs<br>- Data on projects and beneficiaries |
| **Methods of data collection and elaboration** | - Almost 40 country experts were in charge of collecting the relevant information<br>- The huge amount of information collected was summarised in a concise and structured way<br>- Quality and consistency checks were carried out by the Core Team on a continuous basis | - Eight case studies were produced in a narrative and mostly qualitative form<br>- A stakeholder seminar was organised to discuss the findings emerging from the case studies | - Three online and telephone surveys<br>- Statistical analysis through regression models<br>- Bayesian Networks Analysis |
| **Outputs of the analysis** | - Stylised facts explaining SMEs' growth and innovation<br>- Taxonomy of ERDF policy instruments<br>- Identification of patterns in the use of policy instruments<br>- Preliminary propositions on intervention logics<br>- Collection of available evidence on performance<br>- Identification and clustering of beneficiary SMEs | - Analysis of the rationale and relevance of the policy mix impacting SMEs in relation to the context<br>- Assessment of the appropriateness, effectiveness and efficiency of the instruments funded by the OPs<br>- Identification of examples of good practice in the use of policy instruments | - Detailed reconstruction of the intervention logic, structured according to combinations of Context variables-Mechanisms-Outcomes<br>- Test of the causal chain of the theory of intervention<br>- Test of an innovative methodological tool |
| **Deliverables** | - First Intermediate Report Vol. I: summary report<br>- First Intermediate Report Vol. II: 50 OP summary fiches | Second Intermediate Report | Third Intermediate Report |

Source: CSIL.

### 2.3.1 Review of ERDF support to SMEs at EU level

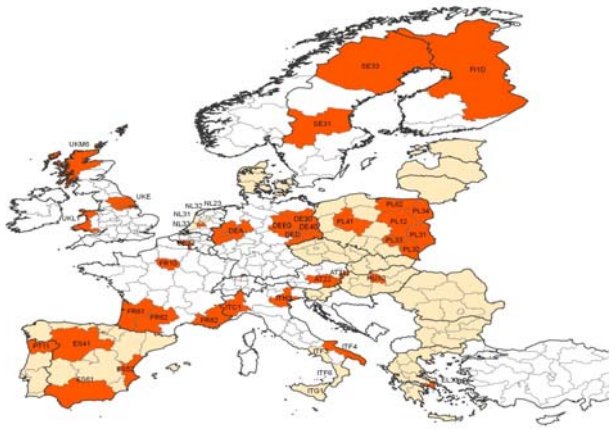
The first step of the evaluation was implemented at EU level and involved the analysis of the form taken by ERDF support to SMEs and the collection of initial evidence on the mechanisms used and the degree and effectiveness of the policy instruments mobilised in this context. To this end:

- An **overview of the environment** in which European SMEs operated during the 2007-2013 programming period was provided and the dynamics of SME performance over that period were analysed to unveil structural trends and heterogeneity from the sectoral and geographical points of view.
- In the **theoretical and empirical literature** the barriers and market failures generally preventing SMEs from developing and innovating, and which justify public support, were identified. The various measures and instruments adopted to promote SME development and innovation were outlined and a number of conditions stressed by the literature,[18] whereby policy instruments are expected to achieve given outcomes, were discussed.

[18] See the full list in Annex I.

- The evidence from the literature was combined and compared with information extracted from a sample of 50 ERDF OPs, selected by DG REGIO by virtue of the great attention they dedicate to SME support (representing almost 65% of total ERDF allocation for business support during the same programming period), in order to draw a more accurate picture of the different policy instruments put in place during the period of analysis. The operational definition of a policy instrument adopted for this study is the following: the most basic policy intervention to which it is possible to attribute an expenditure, a mode of delivery, a type of beneficiary SME, and a specific objective.[19] On the basis of the analysis of the programming documents and the interviews with policymakers, a total of 670 policy instruments were identified across the 50 OPs, characterised by a combination of barriers to be tackled, modes of delivery, type of beneficiary and specific objectives defined as expected changes in the production input and expected changes in observable SME performance. The volume of public funds programmed and spent for each policy instrument were retrieved.[20] Following a bottom-up approach, the 670 policy instruments were grouped into 12 homogenous categories and preliminary propositions about the logic of intervention of the main types of policy instruments were outlined (see the box below). Regional and national preferences were pointed out in both the policy mix and the targeted beneficiaries.
- The **degree of effectiveness** of policy instruments and OPs resulting from the monitoring indicators collected by the Managing Authorities and other already existing qualitative or quantitative evidence (previous studies if available) was shown.

**Figure 6. Overview of the 50 Operational Programmes analysed**



**23 EU Member States**, of which:
- 1 regional OP at NUTS 3 level
- 22 regional OPs at NUTS 2 level
- 6 regional OPs at NUTS 1 level
- 5 multi-regional OPs
- 16 national OPs at NUTS 0 level

Note: The regions covered by regional OPs are indicated in the darker colour; areas covered by national or multiregional OPs are indicated in the lighter colour.
Source: CSIL.

[19] In general terms, this definition of policy instrument corresponds to the level of policy action carried out by the Managing Authority, as described in the Operational Programme and/or in the Annual Implementation Report.

[20] It was possible to determine the financing at policy instrument level for 85% of the cases.

**Box 1. Main categories of policy instruments for SME development and innovation**

The following main categories of policy instruments were found.

**Business creation and development**: instruments for the promotion of business creation, early development, modernisation, structural change, financing e.g. building construction or modernisation, purchase of tangible and intangible assets, employment.

**Support for R&D projects**: instruments supporting research and applied development activities (which may, in some cases, include the commercialisation of innovation) of enterprises individually or in collaboration with the research centres of other firms.

**Development of technological or non-technological innovation**: support to innovation only, without any activity regarding research and experimental development. It includes, for example, instruments supporting a technology upgrade in already existing enterprises, as a way of increasing innovation, managerial and organisational innovation, and the commercialisation of innovative products.

**Access and diffusion of ICT**: instruments supporting the access to and diffusion of ICT services and solutions for SMEs or enterprises in general. ICT solutions can be used, for example, for e-commerce, business-to-business communication, or for increasing the efficiency of the productive system.

**Infrastructures and related services**: instruments that only indirectly benefit both SMEs and all enterprises, via the provision of infrastructures aimed at improving the conditions for doing business and the introduction of new services targeting the business sector, such as technology parks, logistic centres, and the creation or strengthening of networks of business support organisations.

**Generic access to finance**: different tools to provide SMEs (or enterprises in general) with capital for their activities, without any indication of the conditions for the use of this capital.

**Creation of innovative companies**: specific support for the creation or development of new enterprises with a strong innovative base, oriented towards the commercialisation of innovative products (e.g. innovative spin-offs).

**Internationalisation and visibility**: instruments supporting SMEs (or all enterprises) in going international, mainly by means of support for participation in fairs, partner search, incoming missions; support for promotional and visibility actions.

**Knowledge and technology transfer**: instruments supporting knowledge and technology transfer from research centres/universities to enterprises, for the adoption of innovative products and processes.

**Support for improving capacities**: instruments aimed at promoting the development of skills and capabilities of SMEs or enterprises in general, so as to promote an entrepreneurship culture and capacities in general, or to provide knowledge on specific issues, such as the development of a business plan, ICT and green energy opportunities.

**Networking**: instruments specifically designed to support the establishment of partnerships, networking and clustering among enterprises and the formation of cooperation platforms.

**Eco-innovation**: instruments meant to introduce environmentally-friendly products, processes and technologies into enterprises.

Source: CSIL.

All the variables used to characterise the policy instruments are listed in the table below, whereas a more detailed definition can be found in the First Intermediate Report.

**Table 2. Variables used to characterise the policy instruments**

| Variable | Options | |
|---|---|---|
| **Mode of delivery** | · Grant<br>· Repayable financial support<br>· Equity finance | · Information campaign, events, seminars<br>· Consulting, advice, technical assistance<br>· Provision of infrastructure<br>· Combination of the above |
| **Targeted beneficiaries** | · Individual SMEs<br>· Individual enterprises<br>· Groups of SMEs<br>· Groups of enterprises<br>· SMEs in partnership with universities/research institutions<br>· SMEs in partnership with large enterprises<br>· Single generic entrepreneurs<br>· Combination of the above | · Individual SMEs in a specific sector<br>· Individual enterprises in a specific sector<br>· Groups of SMEs in a specific sector<br>· Groups of enterprises in a specific sector<br>· SMEs in a specific sector in partnership with universities/research institutions<br>· SMEs in a specific sector in partnership with large enterprises<br>· Single entrepreneurs belonging to specific groups (young, female, etc.)<br>· Single entrepreneurs belonging to specific economic sectors |
| **Main barriers to be tackled** | · Competition failures<br>· Transaction costs<br>· Asymmetric information<br>· Lack of human capital<br>· Under-provision of infrastructures and institutions | · Risks related to the uncertainty of R&D<br>· Lack or inefficiency of intellectual property protection<br>· Imperfect information on innovation opportunities<br>· Coordination and network failures<br>· Non-availability of positive externalities arising from agglomeration effects<br>· Limited capacity to absorb spill-over effects |
| **Intermediary** | · No intermediate body<br>· Business support organisations<br>· Universities or research centres<br>· Cluster managers or Incubators/ technology parks | · Municipalities, other local public authorities or associations of local public authorities<br>· Chambers of commerce<br>· Financial institutions/Fund managers<br>· Combination of the above |
| **Changes in SME production inputs** | · Create jobs<br>· Safeguard jobs<br>· Improve the quality of work<br>· Improve human capital | · Increase fixed capital<br>· Increase the R&D and innovation level<br>· Increase ICT<br>· Increase entrepreneurship<br>· Increase managerial/organisational capacity |
| **Changes in SME performance** | · Increased turnover<br>· Increased share of exports | · Strengthened equity structure<br>· Increased profitability<br>· Increased probability of survival |

Source: CSIL.

Despite the great variety in the evidence base that this evaluation is built upon, some methodological challenges were noted. As far as possible, measures were taken to mitigate any possible bias or weaknesses in the evaluation.

- **Ensuring a coherent categorisation of the policy instruments**. If the classification of policy instruments according to common variables was necessary to realise a cross-analysis of 50 different OPs and their manifold policy instruments, the categorisation of policy instruments was not always obvious, particularly as far as the modes of delivery, expected changes and barriers tackled were concerned. Country experts double-checked their classification with the Managing Authorities on numerous occasions[21] and the Core Team provided a thorough quality and consistency check on the information delivered by the experts.
- **Retrieving statistics on SMEs**. The statistical information base on SMEs is very poor. Most Eurostat statistics on enterprises are not disaggregated at a size-level. Moreover, a disaggregation of data on R&D expenditure and capital investment at NACE 2 level is missing for some countries and the time series are not always complete. When analysing data at the geographical level, there are no official statistics available at the same time as a size-level and regional (NUTS 2) level disaggregation. In order to compare the information on policy instruments for the regions covered by the regional OPs under assessment (NUTS 1, NUTS 2 and NUTS

[21] Even during the second step of the evaluation exercise, involving the implementation of case studies for selected OPs.

3) with finer data on SMEs, statistics from the national statistics offices were collected and processed regarding the number of SMEs according to size class and industrial sector.

- **Integrating data from the monitoring systems**. According to the analysis carried out (see Section 5.1.2) the OP monitoring systems are considered good enough to assess the instruments' achievements of their intended objectives only in seven cases out of 50. The monitoring system is often poor at accounting for the effectiveness of specific policy instruments for the various reasons discussed in Section 5.1 of this report.[22] To partly overcome this limit, monitoring data were complemented with additional evidence (quantitative and qualitative) made available in other ad hoc interim or ex-post studies, whenever available, and with interviews with the managing authorities, implementing bodies and independent experts. Almost 190 interviews were conducted.
- **Dealing with the early timing of the evaluation**. The time frame of the evaluation is such that only a preliminary and partial picture of the instruments' effectiveness can be ascertained. At the time of the analysis (October 2014 to February 2015), around half of the policy instruments were still under implementation and the supported projects unfinished, so that no conclusive assessment could be provided. The case studies on eight out of the 50 OPs (second step of the analysis, see below) provided stronger evidence of the actual and expected achievements of the policy instruments, including those still in the implementation phase.

#### 2.3.1 In-depth analysis of eight Operational Programmes

The objective of the second step of the evaluation was to enrich the preliminary hypotheses obtained from the analysis of the 50 OPs concerning the relationship between policy instruments, characteristics of SMEs and outcomes, by analysing eight specific programmes. In short:

- **Eight OPs from the list of 50 were selected with the aim of ensuring the greatest degree of representativeness** in terms of socio-economic and institutional context, regional strategy and the opportunity to learn important lessons about the mechanisms concerning SME support. The analysis encompassed areas that were affected to differing degrees by the economic recession and that belong to different Cohesion Policy objectives, which is likely to affect their capacity to react to the crisis and to overcome the structural barriers hampering SME development and innovation. The diversity of the OPs included in the sample allowed for different regional and national specificities to be taken into account, thus bringing context variables more forcefully into the TBIE.
- **An assessment of the effectiveness of SME support at the programme level was made**, outlining the theory of the programme and considering the role of the wider policy mix within which policy instruments are embedded, including other Structural Funds interventions and regional/national initiatives. The analysis covered the behavioural changes brought about by SME support instruments and the performance outcomes expected and recorded at firm and regional level. The context features that influenced the materialisation of the effects were pointed out, and good practices were identified in the form of successful/coherent combinations of policy instruments, mechanisms of change within SMEs and outcomes. The evidence base for the evaluation consisted of a desk analysis of programming and

[22] See also the First Intermediate Report.

implementation documents, existing studies and evaluation, and extensive field work, which included conducting around 230 interviews.

- **A "stakeholder seminar" was held on 29th April 2015 to discuss the preliminary findings and the main issues emerging from the eight case studies** with 33 people, including European Commission staff, members of the evaluation team, representatives of other Work Packages related to business support, academic experts and people involved in the implementation of the OPs on the ground. Some of the main issues highlighted during the course of the discussion were: i) the targeting of SMEs based on their level of technology intensity; ii) the convenience of having widespread versus selective instruments; iii) the role of the ERDF in the regional policy mix.

**Figure 7. Overview of eight Operational Programmes analysed in-depth**


Note: EU Community contributions shown in the map are the 2007-2013 ERDF amounts programmed at end 2012.
Source: CSIL.

The assessment at OP level was mainly qualitative in nature, due to the already mentioned limitations in the availability of monitoring indicators and the still on-going expenditure. Available data on financial expenditure and achievements, as well as any already existing study or evaluation, were exploited as far as possible to incorporate some quantitative evidence into the analysis.

### 2.3.2 In-depth analysis of three policy instruments

Finally, the analysis moved from the programme to the policy instrument level. The TBIE framework was applied to evaluate three specific policy instruments implemented in three different contexts. Specific objectives were to further specify their intervention logic, ascertain a conjectural representation of the causal chain triggered by the instrument and leading to the generation of certain effects, and compare it with the policymakers' expectations. The evaluation of the policy instruments was carried out as follows:

- **Three policy instruments were selected** from the policy mix put in place by the eight OPs previously analysed, ensuring that the chosen instruments were representative of the main types of instrument used throughout the EU, that they played an important role in the policy mix of the OP in terms of financial resources allocated and/or number of beneficiaries reached, and that they covered diversified contexts, with a relatively high number of projects completed and the contact details of beneficiaries available.
- **The intervention logic of each instrument was reconstructed** as designed by the policymakers and, if such were the case, revised in the course of the

programming period. Sources of information were the programming and implementation documents and, especially, interviews with the Managing Authorities and implementing bodies, additional to those already implemented at the OP level of analysis.

- **Descriptive information and data on beneficiaries** (e.g. sector, size, location) **and projects** (e.g. volume of the investment and public contribution) **were collected** from the Managing Authorities and implementing bodies, to better understand how the policy instrument was actually put in place and which SMEs effectively benefitted from it.
- **Three surveys of beneficiary SMEs were conducted** in order to collect their views on the effects generated in their way of doing business and in their performance as a result of the public support received. Questionnaires followed a common structure, but were tailored so as to test specific mechanisms anticipated in the theory of the intervention of each instrument.
- **The evidence collected to test the theory**, i.e. to reject or confirm the expectations about the mechanisms of change and the outcomes associated with the instrument, **was statistically analysed**. The analysis consisted of a combination of traditional statistical techniques to analyse the responses (e.g. Principal Component Analysis) and to test the associations between variables and estimate the statistical significance of coefficients (regression models), and a more innovative tool to illustrate the network of random variables that concur to determine the materialisation and strengths of given outcomes, i.e. the **Bayesian Network Analysis**. This statistical and graphical tool is generally used to process the responses of customer satisfaction surveys and was tested here for the first time to reveal the causal chain explaining the changes in SME behaviour and in economic performance variables, contingent to the characteristics of SMEs, the activities implemented, context features, the volume of support received, and other factors.

**Figure 8. Overview of three policy instruments analysed in-depth**


Source: CSIL.

The innovativeness of the methodology adopted in this third level of analysis implied some challenges, which were duly acknowledged and addressed by the research team:[23]

[23] For an extensive explanation see the Third Intermediate Report.

- **Realist Evaluation is a relatively new and emerging approach**. As such, there were some obstacles to its effective implementation. The difficulty in distinguishing between context, mechanisms and outcome variables was noted: some variables, for instance, could operate at the same time both as exogenous factors and as mechanisms driving the generation of outcomes. When this was the case, it was pointed out by the evaluator. Also, there was a certain difficulty in summarising the complex theory of an intervention in simplified Context-Mechanisms-Outcomes configurations. To overcome this, the theory of policy instruments was illustrated from more than one perspective, focusing on specific aspects of the theory, and distinguishing between initial and subsequent theories if relevant changes occurred during the period.
- **Online/telephone surveys of SMEs were used to collect a wide range of fresh data**. Great attention was devoted to reducing the risk of a low response rate and the possibility of social desirability bias, both before the launch of the survey, through precise testing of the questionnaires, and during the implementation of the survey, through frequent checks of responses and the representativeness of the sample of respondents compared to the total target population. In addition, SMEs received several invitations to participate in the survey and a telephone follow-up in order to obtain a large number of valid questionnaires (response rates range from 25% to 32%).
- **The BNA is an experimental method that provides added value to traditional econometric impact analysis techniques.** The nature of the method adopted is experimental and thus it entailed the real risk of producing inconclusive results, if no sufficiently reliable and meaningful network could be found to test the theory of the policy instruments. Instead, useful and interesting results emerged thanks to the combination of BNA and other statistical tools. Their validity and robustness were tested on different sets of variables and by double-checking some important relationships in the network with regression models.

### *2.3 Robustness of the findings*

Thanks to the different measures put in place by the Core Team to address the already mentioned limitations that arise at the different stages of the evaluation process, this evaluation study produced a wide range of findings that can be considered to be robust enough to formulate sensible conclusions and generalisable policy implications. Robustness was ensured by the:

- **Representativeness of the objects of analysis**. As mentioned above, the 50 OPs considered for the EU-level analysis are the ones devoting the greatest funds to SMEs (in absolute or relative terms); the eight OPs for case studies were selected to ensure the representativeness of different contexts and strategies; the three policy instruments are good examples of the most frequently used categories of instruments found at EU level. Moreover, feedback from nearly 700 beneficiary SMEs was collected through direct surveys, which achieved particularly high response rates. The potential skewness in the distribution of the sample of respondents in terms of firm heterogeneity was avoided, and the representativeness of the targeted population (in terms of size, sector of activity, location, volume of the investment project and of the public contribution) was ensured by adjusting the sample composition in the course of the surveys by inviting targeted underrepresented categories of beneficiaries to submit the questionnaire.

- **Triangulation of data sources**. The findings of the ex-post evaluation that are presented in this Final Report are based on a variety of sources of evidence. Monitoring data, programming and implementation documents, previous assessments, evaluations and studies were all taken into account and complemented with primary information provided by the over 1,100 people interviewed or surveyed during the different steps of the evaluation. The evidence base ensures coverage of the opinions and perspectives of the different stakeholders involved in the design and implementation of the OPs, the beneficiaries and the independent experts.
- **Triangulation of methodologies and results**. The analysis combined different evaluation methodologies, both qualitative (desk documentary analysis, case studies, seminars) and quantitative (statistical analysis of the EU context, descriptive statistics, principal component analysis, regression analysis, Bayesian Network Analysis) by using one as a cross-check for the other. This produced reliable and genuinely complementary results.

## 3 TAKING STOCK OF SME SUPPORT

During the 2007-2013 programming period, the ERDF allocated a total of EUR 60.4 billion for support to enterprise, of which an estimated EUR 45-48 billion was allocated to SMEs. Although it was not the only instrument available in the EU for industrial policy, the ERDF was a significant and, sometimes, decisive policy instrument to support SMEs in the context of regional development. This chapter provides an overall picture of ERDF fund allocation and magnitude in different countries and regions.

The following main messages are presented:

- In line with the expected contribution of Cohesion Policy to the renewed Lisbon agenda, SME support accounted for an important share of the ERDF programmes over the period 2007-2013, especially for Regional Competitiveness and Employment objective regions. A higher share is usually associated with a low total volume of expenditure.
- There is considerable variability in ERDF expenditure at regional and sub-regional (NUTS3) level in the EU, with only scattered evidence pointing to a higher concentration in territories with a greater incidence of SMEs (in terms of contribution to total employment in the business sector) or in more developed areas.
- The ERDF is part of a wider policy agenda supporting SMEs in the EU Member States and regions benefitting from many funding sources at EU, national and regional level. The role the ERDF can play in SME support should be realistically assessed against the magnitude and relevance of the measures within each programme and specific territory. In many cases the ERDF can actually play a decisive role in supporting industrial policy favouring SMEs, in other cases it can still play a pivotal role, in particular if funds are highly concentrated.

### *3.1 Overall vision of the magnitude of ERDF support to SMEs*

More than 20% of the total volume of ERDF allocation in the 2007-2013 programming period (EUR 303.8 billion), which amounted to EUR 60.4 billion, was allocated to support to enterprises in the 28 Member States (see Box 2).

**Box 2. Definition of support to enterprises: ERDF codes of expenditure**

According to WP13 'Geography of Expenditure', the codes of expenditure used to identify ERDF support to enterprises are the following:

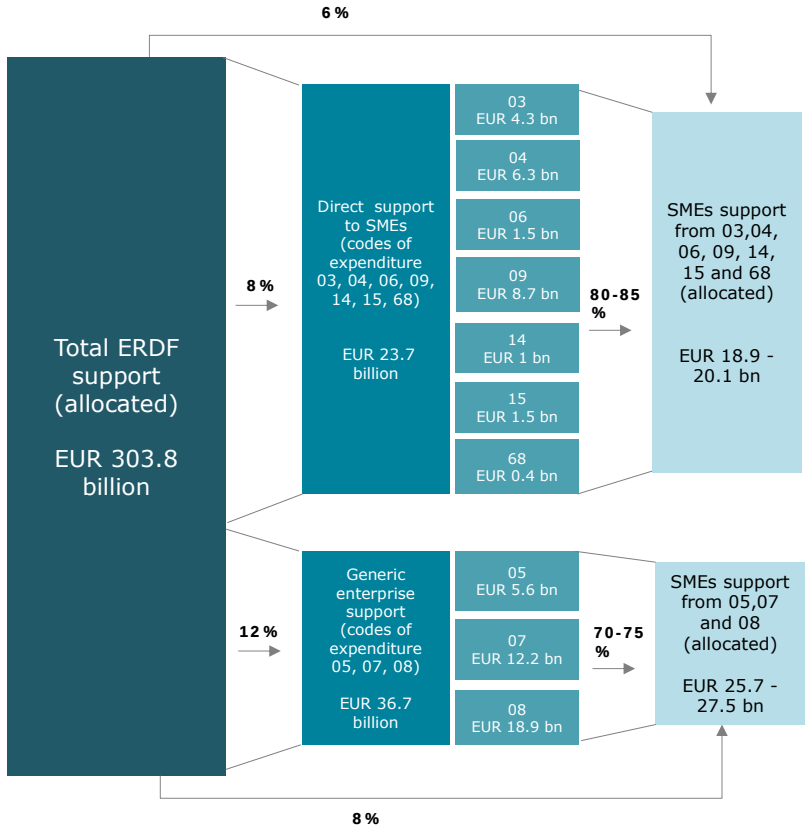
- Under the priority theme 'Research and technological development, innovation and entrepreneurship' priority theme': 03 Technology transfer and improvement of cooperation networks; 04 Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres); 05 Advanced support services for firms and groups of firms; 06 Assistance to SMEs for the promotion of environmentally-friendly products and production processes (...); 07 Investment in firms directly linked to research and innovation (...); 08 Other investment in firms; 09 Other measures to stimulate research and innovation and entrepreneurship in SMEs.
- Under the priority theme 'Information society': 14 Services and applications for SMEs (e-commerce, education and training, networking, etc.); 15 Other measures for improving access to and efficient use of ICT by SMEs.

- Under the priority theme 'Improving access to employment and sustainability': 68 Support for self-employment and business start-ups.

In addition, code 74 Developing human potential in the field of research and innovation, in particular through post-graduate studies, classified under the category 'Human capital, education and training', was included in the definition of business support for the purpose of WP2, as required by the Terms of Reference.

Source: CSIL.

**Figure 9. Amount of ERDF funds allocated to business and SME support between 2007 and 2013**




Source: CSIL estimates based on the processing of allocated ERDF at 2014 for relevant codes of expenditure, data collected for Task 1, and information provided in WP4 'Large enterprises'.

When distinguishing between codes of expenditure more explicitly geared towards SMEs (03, 04, 06, 09, 14, 15, 68) and others that more generally refer to all enterprises (05, 07, 08), it is clear that the share of SME support is predominant.[24] The exact share of funds committed to SMEs is unknown, but some estimates can be made on the basis of the in-depth analysis carried out under this work package and WP4, specifically focused on large enterprises.

Depending on the assumed share of resources actually committed to SMEs under each code of expenditure, it has been estimated that **ERDF support to SMEs is between EUR 46 and 49**

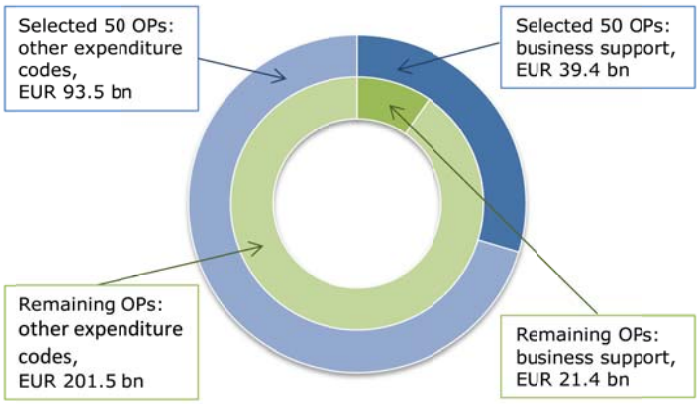
[24] It should be pointed out that a number of Managing Authorities interviewed found it difficult to use these expenditure codes consistently, since some policy actions often related to more than one code and others appeared not to have any appropriate code other than catch-all category referring to "08 Other investment in firms".

**billion, representing 74%-79% of total ERDF support for business, and 15%-17% of total ERDF allocation during the programming period**.

These figures do not include expenditure code 74 'Developing human potential in the field of research and innovation, in particular through post-graduate studies', which is not properly defined as business support according to the Regulation, but is taken into consideration for the purpose of this evaluation study. Over the period, EUR 347 million were allocated to this expenditure code. In what follows, when analysing the volume and distribution of ERDF dedicated to business support, code 74 is taken into account in addition to the other mentioned codes.

65% of total business support throughout the 303 OPs (EUR 39.4 billion) is concentrated in the 50 OPs[25] on which this evaluation study focuses. The average share of ERDF allocated to business support within the 50 OPs is 43%, significantly higher than in the remaining 253 OPs, where business support represents an average of 11% of the total ERDF allocation.

**Figure 10. ERDF allocated for business support in the sample of 50 OPs and the other OPs (2014, EUR billion)**




Note: The outer circle refers to the sample of the selected 50 OPs; the inner circle refers to the remaining 388 OPs that are not included in the study sample.
Source: CSIL based on WP13 database on 2007-2013 ERDF amounts allocated at 2014.

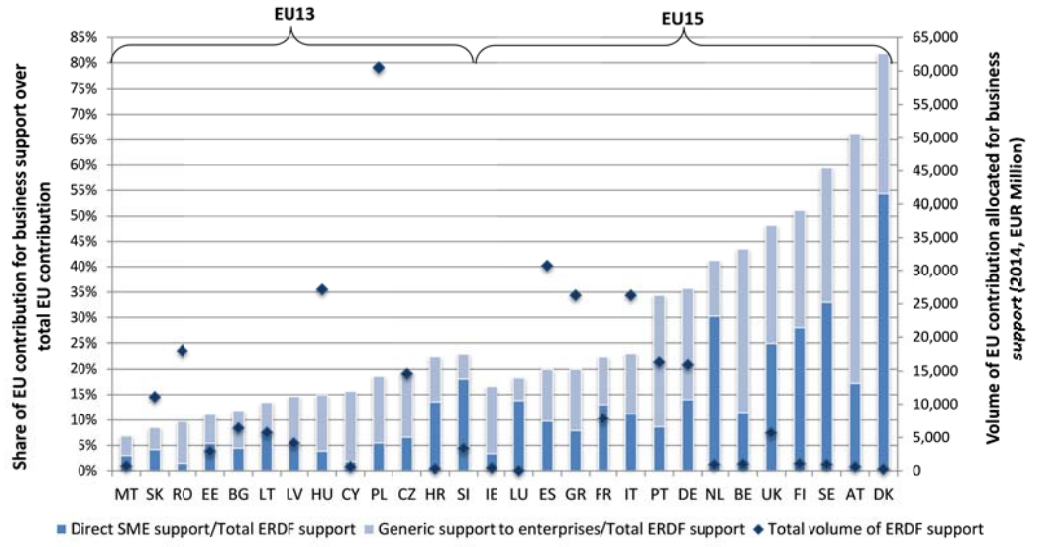
Great differences exist across Member States as regards the share of total EU contributions destined for business support. **The largest shares of support to enterprises out of the total EU contribution are generally allocated by EU15 countries**. In particular, in the last programming period, Denmark, Austria, Sweden and Finland allocated over 50% of their total EU contribution to businesses support. Examples of OPs where business support is a particularly relevant priority are the Danish OP 'Innovation and knowledge', the Portuguese OP 'Factors of Competitiveness' and the Spanish national OP 'Research, Development and Innovation for and by Enterprises - Technology Fund' and the two Swedish regional OPs 'North Central Sweden' and 'Upper Norrland'. Some exceptions can, however, be highlighted when looking at specific OPs. The Hungarian national OP 'Economic Development', the Czech 'Enterprise and Innovations' and the Latvian 'Entrepreneurship and Innovation' OPs allocate a similar share of ERDF to enterprises to the EU15 Member States.[26]

In contrast, the share of EU contributions allocated for businesses by EU13 countries is generally lower. The lowest shares (below 10%) are recorded by Malta, Slovakia, Romania,

[25] The full list can be found in Annex I.
[26] A detailed analysis of expenditure in the sample of 50 OPs is presented in the First Intermediate Report.

Bulgaria and the Baltic counties. Examples of OPs in these countries that devote only limited consideration to SMEs are the Romanian Regional Operational Programme, the Slovakian OP 'Research and Development', the Estonian OP 'Development of Economic Environment' and the Lithuanian OP 'Economic Growth'.

**Figure 11. Volume of ERDF allocated to business support (2014, EUR Million – right hand side) and percentage share of ERDF allocated by Member State to business support out of total ERDF contribution (left hand side)**




Note: In the histogram, darker blue refers to the share of EU contribution allocated to SMEs support (expenditure codes 03, 04, 06, 09, 14, 15, 68), while generic support to enterprises (expenditure codes 05, 07, 08, 74) is represented in lighter blue.

Source: CSIL based on WP13 data on 2007-2013 ERDF amounts allocated at 2014.

When considering the share of funds specifically allocated, both directly or indirectly (via intermediaries and implementing bodies) to SME support, Denmark, Sweden and the Netherlands are the countries that allocated the most overall (more than 30% of total ERDF allocation). At the other end of the scale there are Cyprus, Romania, Malta, Ireland, Slovakia, Bulgaria and Hungary, which allocated less than 5% of the total ERDF contribution to SME support.

This pattern in ERDF allocation is not surprising, as it reflects the higher focus in Competitiveness and Employment regions on the thematic priority of innovation and the knowledge economy as well as the mandatory earmarking (which is voluntary for the EU12 Member States) in line with the Lisbon priorities of competitiveness and employment regions.[27]

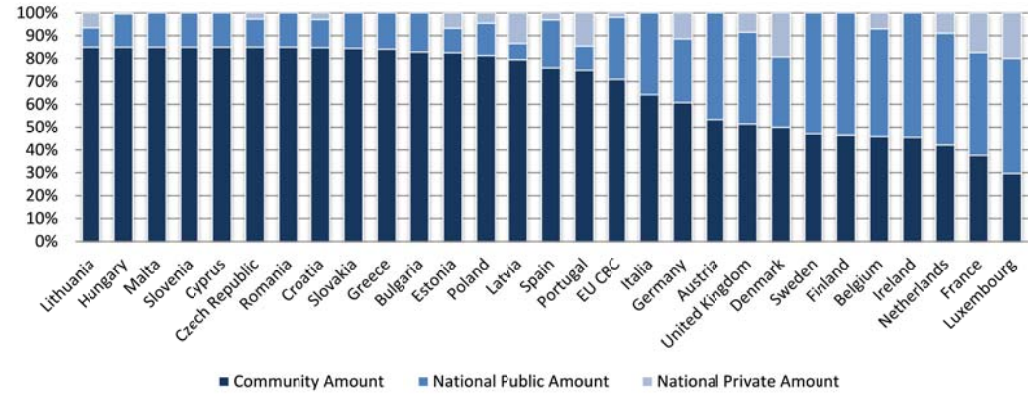
When comparing the volume and the share of ERDF allocations it is possible to distinguish between countries that invested a large share of ERDF in business support, but an overall low volume of funds (this is typically the case of Denmark, Austria, Sweden and Finland), and those where business support was a rather low priority in terms of its share of overall ERDF allocation, but quite significant in terms of absolute value (the most striking example is Poland, followed by Spain, Italy and Hungary). This suggests that **the ERDF plays different roles in the overall policy mix, pursuing either one strong thematic focus or a more diversified mix of priorities**. The level of development of the region or country clearly

[27] Art. 9(3) of Regulation (EC) No. 1080/2006 and Commission Communication COM(2008) 301 final.

influences both the nature of the interventions and the amount of funding (see more on this below).

At the same time, different co-financing rates are applied to Member States, and therefore to paint a clearer picture the volume of EU contribution should be increased by different percentages. The figure below shows the breakdown of Cohesion Policy support provided, respectively, by the European Commission, the national/regional governments and the private sector in each Member State. The ERDF co-financing rate is clearly highest for EU13 countries, but there are also some EU15 countries, such as Greece, Portugal and Spain, with average co-financing rates of over than 70%. In other countries, specifically those of Northern Europe, the share of the national contribution accounted for more than 50% of the total allocation. Some of the countries with the highest share of EU contribution devoted to business support are also those with the lowest EU co-funding rate (notably Denmark, Sweden, Netherlands, UK and Belgium) and higher national public or private matching funds. It can be argued that ERDF interventions of **countries where high shares of national funds are used for business support are expected to be more aligned with or influenced by national strategic orientations**.

**Figure 12. Average shares of matching funds of Cohesion Policy support by Member States – 2007-2013**




Note: CBC indicates Cross-Border Cooperation OPs.
Source: CSIL based on data made available by DG Regio.

### *3.2 ERDF support within a wider policy agenda*

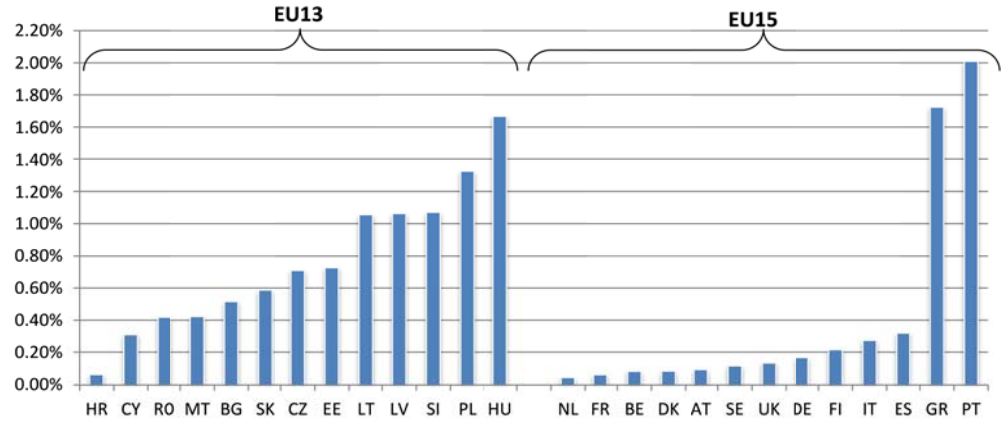
The ERDF is part of a wider political agenda in Member States. Disentangling the complementarity and importance of the ERDF within national and regional policy mixes is important, even though it is challenging because of a lack of comprehensive data on the total volume of resources dedicated to SMEs.

In policy terms, SMEs attract considerable attention at EU, national and regional levels. At EU level, ambitious programmes over the 2007-2013 period were dedicated to SMEs' development such as the CIP (EUR 3.6 billion), or the "Research for the benefit of SMEs" in the "Capacities" programme of the Seventh Framework Programme for Research and Technological Development (EUR 1.3 billion). Also, the EIB Group[28] provides targeted products – loans, equity and guarantees – that support the entire life cycle of SMEs (in 2012 the EIB Group's support for SMEs reached EUR 13 billion).

[28] The European Investment Bank and the European Investment Fund.

A preliminary indication of the scale of ERDF support is given by its relative weight compared to national levels of total investment (gross fixed capital formation - GFCF). **The average share of ERDF funds of national GFCF is higher in EU13 countries (0.76% vs 0.41% in EU15)**. Lithuania, Latvia, Slovenia, Poland and Hungary are countries where the ERDF represents an even larger share of total national investment (over 1%). Portugal and Greece stand out in the group of EU15, showing a much higher dependence on ERDF support, even more than in EU13 Member States. This reflects the large cut in national investment decided by the two governments to reduce the risks resulting from the national debt crisis.

**Figure 13. Share of ERDF allocated to business support in national GFCF (2007-2013)**

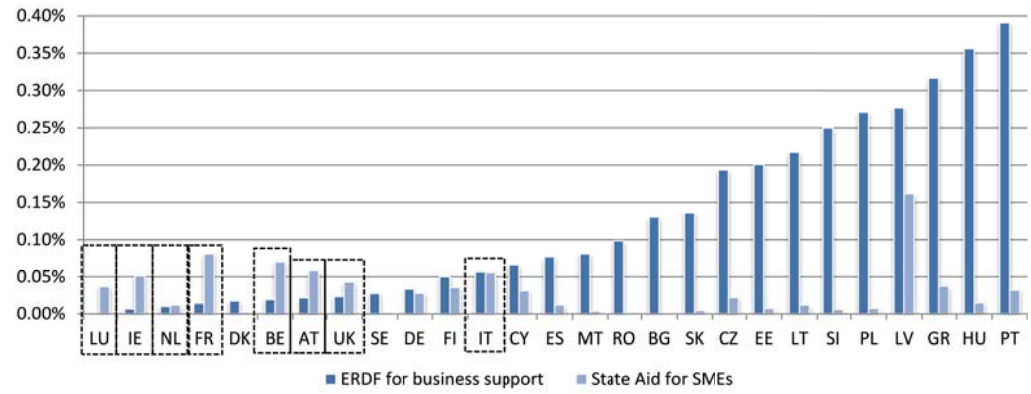



Note: GFCF data are missing for Ireland and Luxembourg over the entire period 2007-2013. GFCF value for 2013 is also missing for Romania.
Source: CSIL based on GFCF Eurostat Data and WP13 data on 2007-2013 ERDF amounts allocated at 2014.

Other signs of the ERDF's relative importance within the broader policy mix at national and regional levels come from comparing the amount of ERDF allocated to business support with the amount of State Aid expenditure by Member States on the horizontal objective of common interest "SMEs including risk capital".[29] **In some countries (Portugal, Greece and the majority of EU12), the ERDF is basically the only source of business support**. In other countries (e.g. France, Austria, Italy and the UK) the proportion of national state aid is much higher than that of ERDF support. Based on this, one might expect the ERDF strategy to be more ambitious perhaps in countries where the ERDF is the only (or most significant) source of funds for industrial policy measures addressed to SMEs, than in countries where it does not constitute a critical mass of funds. However, even in the latter cases, in principle the ERDF could still play a pivotal role if concentrated in a few selected areas or objectives.

[29] The 2014 State Aid Scoreboard comprises aid expenditure made by Member States before 31.12.2013 and which falls under the scope of Article 107(1) TFEU. The data is based on annual reporting by Member States pursuant to Article 6(1) of Commission Regulation (EC) 794/2004. Expenditure refers to all existing aid measures to manufacturing industries, services, agriculture and fisheries, for which the Commission adopted a formal decision or received an information fiche from the Member States in relation to measures qualifying for exemption under the General Block Exemption Regulation.

**Figure 14. ERDF allocated to business support and State Aid expenditures for "SMEs" by Member State (both as a percentage of GDP)**




Source: CSIL based on DG Regio raw data on 2007-2013 ERDF amounts allocated at the end of 2012 and 2014 State Aid Scoreboard.

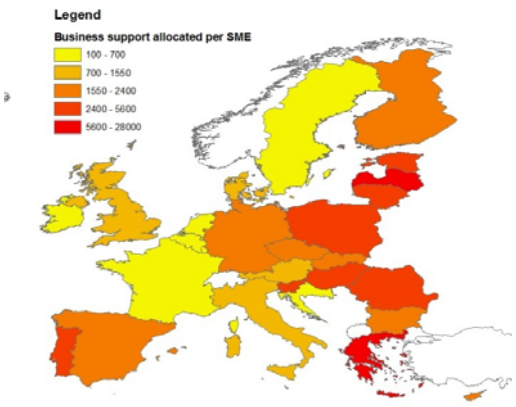
Also, differences within countries should not be underestimated. Over the period 2007-2013 the level of funds dedicated to SME support may have diverged at the national and regional levels. For instance, according to a recent study by the Italian Ministry of Economic Development,[30] in Italy there was a marked decrease in state aid at a national level between 2007 and 2012 in order to reduce the government debt in a period of severe macroeconomic crisis. This affected mostly the Southern Convergence regions, for which the ERDF became an important source of funding to counterbalance the decreased support granted by the national government.

Regional differences are pronounced when considering the role the ERDF can actually play for SMEs. Considering the approximate volume of ERDF available for SME support and the total number of SMEs at national or regional level,[31] it is possible to estimate the average volume of funds ideally available per individual SME. The ERDF funds available, in theory, for each SME range from less than EUR 1,000 (e.g. some French regions) to nearly EUR 30,000 (e.g. in the Greek capital region of Attica), with higher support especially in Convergence countries and regions. Thus, in some regions the ERDF can provide non-negligible financial support to SMEs. In addition, since the SMEs that actually benefited from ERDF are a small share of the entire SME population of the region, the volume of ERDF available to them can be much larger, also depending on the targeting strategy of the Managing Authorities (see more on this in Chapter 5).

[30] Italian Ministry for Economic Development (2013).

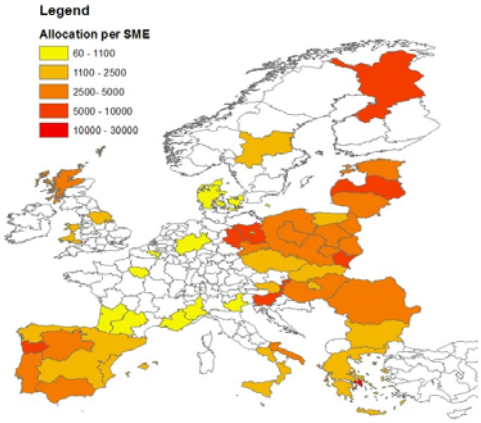
[31] The number of SMEs at NUTS 2 level was taken from national statistical sources, only for the areas covered by the 50 OPs.

**Figure 15. Estimated volume of ERDF allocated per SME at national level (EUR)**




Source: CSIL based on WP13 database on 2007-2013 ERDF expenditure and allocations at 2014 and data on the number of SMEs taken from the Commission's SME Performance Review (2014).

**Figure 16. Estimated volume of ERDF allocated per SME at regional level (EUR)**



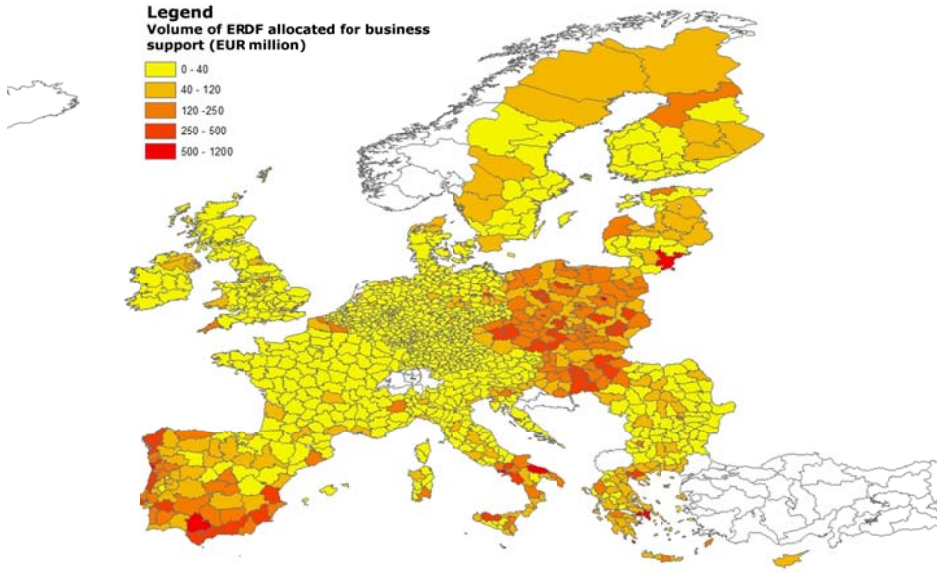

Source: CSIL based on WP13 database on 2007-2013 ERDF expenditure and allocations at 2014 and data on the number of SMEs taken from task 1 for areas covered by the sample of 50 OPs. No comprehensive data on the number of SMEs at regional level are available in EU data banks.

### *3.3 Geography of expenditure*

In order to facilitate the identification of specific strategic orientations at individual OP or regional level (an issue that is the subject of Chapter 4), it is more informative to reveal the specificities of the strategies implemented at the programme level, rather than to look at national patterns. While it is obvious that significant differences will be apparent at regional level within large countries, these are in fact more pronounced in Italy and Germany than, for example, in France and Poland. The aggregate result of the relatively more significant share of the EU contribution to business support in the EU15 (see Figure 11) can be better qualified by highlighting the sizeable share, for example, in some of the Polish and Czech regions, as well as the relatively small share in some Competitiveness regions, for example in France and Spain. Going even further than this, when looking at the relevance of ERDF at a province level (NUTS3), the ERDF contribution to SMEs is seen to be particularly concentrated in major urban areas, centred around major cities.

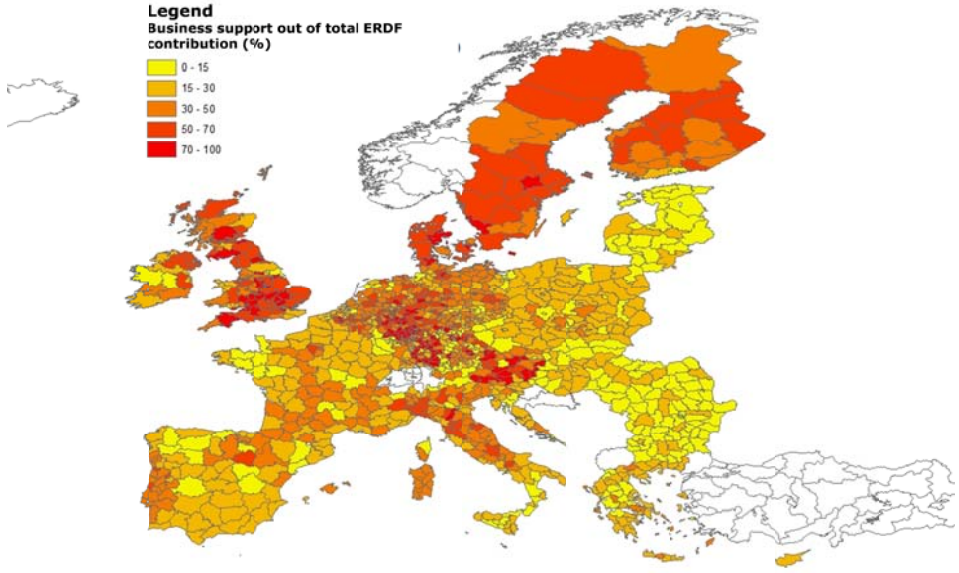
The geographical allocation of ERDF funds to business support is certainly shaped by contextual socio-economic characteristics and institutional and regulatory features, as extensively discussed in the previous sections. It is however reasonable to wonder to what extent ERDF allocation at a geographical level actually reflects the significance of SMEs in the national or regional economy.

**Figure 17. Volume of ERDF allocated for business support at NUTS 3 level (2014)**




Note: Classes are defined according to the Natural Breaks method.
Source: CSIL based on WP13 database on 2007-2013 ERDF amounts allocated at 2014.

**Figure 18. Share of ERDF allocated for business support out of total ERDF contribution at NUTS 3 level (2014)**

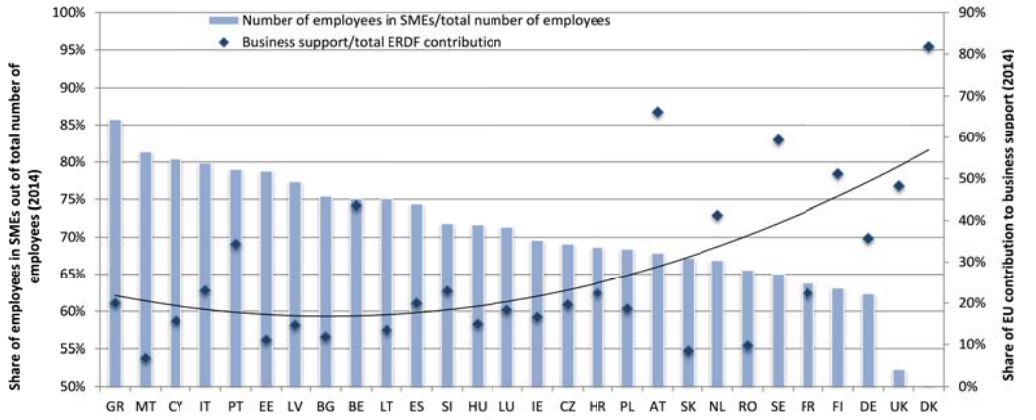



Note: Classes are defined according to the Natural Breaks method.
Source: CSIL based on WP13 database on 2007-2013 ERDF amounts allocated at 2014.

Given the importance of the institutional and regulatory aspects of the allocations at the national level, it is not surprising that a modest negative correlation is found between the share of ERDF devoted to business support and the share of employees in SMEs out of the total number of employees in the business sector within each country. It suggests that, **at**

**aggregate level, the ERDF contribution to enterprises is not concentrated in the countries with the highest share of employees in SMEs** rather it reflects other considerations.[32]

**Figure 19. Share of ERDF contribution for business support (2014 – right hand side) and share of business sector employees in SMEs (2014 – left hand side)**




Note: Data on employees refer to NACE sectors B-N, excl. K. Missing data for Denmark.
Source: CSIL based on WP13 data on 2007-2013 ERDF amounts allocated at 2014 and on the EC SME Performance Review Dataset (2014 edition).

**A more refined analysis at territorial level would, however, provide a rather different picture**. For instance, when considering two illustrative policy instruments implemented in the regions of Apulia (Italy) and Castile and León (Spain),[33] the number of beneficiaries and the volume of ERDF paid are concentrated in provinces that actually have the highest number of enterprises and the highest number of employees in SMEs. In contrast, in Poland the number of employees in SMEs is not linked to the level of absorption of ERDF funds, which were allocated to one of the largest policy instruments supporting technological innovation of SMEs. Instead, a relationship is found, albeit a weak one, between the distribution of ERDF resources from this policy instrument and macroeconomic regional statistics, such as GDP annual growth and regional unemployment rates, which differ significantly from one region to another: even if, with some exceptions, the more developed areas tend to absorb higher funds.

This aspect has interesting and important policy implications for the possible trade-off between supporting innovation in SMEs and the emergence of territorial imbalances, as is discussed in the next chapter.

[32] No significant relationship is found between the share of ERDF support and the share of SMEs out of total enterprises in a country.
[33] See the Third Intermediate Report.

# 4 ERDF STRATEGY ON SMES

The theory-based evaluation approach of the present study calls for an in-depth understanding of the initial logics of intervention of ERDF support to SMEs, their evolution over time and the way they have been translated into policy instruments. Based on a comprehensive assessment of the sample of 50 OPs, the in-depth analysis of eight case studies and the thorough investigation of the logic of three selected policy instruments,[34] evidence collected points to the following key messages:

- When looking at the aggregate, the analysis of the rationales of ERDF programmes reveals that, despite the wide variety of territorial contexts and productive vocations of SMEs, the logics of intervention were rather homogenous and targeted the objectives set out in the Lisbon strategy. The general objectives of the policy instruments under assessment were equally spread between those addressing SMEs innovation and those targeting SMEs growth; the two objectives were often combined in a dual strategy within the same programme. A robust assessment of the possible underpinning trade-offs, for example in terms of targeting, was generally lacking.
- Managing Authorities showed a high degree of responsiveness in adapting the overall design of the policy and adjusting individual policy instruments to the specific needs during the implementation period. In many cases the emergence of the financial and economic crisis required a reprogramming activity largely inspired by the wish to counteract the pressure of the crisis in terms of access to credit.
- The aggregate analysis showed that ERDF strategies addressing SMEs were implemented through long lists of catch-all catalogues of policy instruments, mainly consisting, in most countries, of conventional modes of delivery in the form of grants and support to individual firms. Generally, there was little consideration of which instruments were likely to be the most effective to achieve certain outcomes.
- A more accurate analysis resulting from the case studies offers a more nuanced picture with the emergence of slow but clear patterns of evolution towards more refined and tailored instruments. A combination of different modes of delivery (e.g. grants and loans), the promotion of innovative instruments (e.g. Living Labs, open innovation) and a shift to repayable aid and modes of delivery conditioned to results were all recorded.

## *4.1 Rationales and prevailing theories of change of ERDF support to SMEs*

### 4.1.1 Logic of interventions and trade-offs

As illustrated in literature, there are two main rationales underpinning the logic of intervention supporting SMEs: either addressing market or system failures that hinder the capacity of existing SMEs to compete and grow, or to support their start-up and growth in the sectors deemed to be the most promising and relevant for the territorial competitive system.[35] The strategic choice of the general and specific objectives to be pursued is not neutral since it requires assessing different trade-offs in terms of performance and effectiveness.

[34] The eight OPs subjected to case studies are listed in Chapter 2. They are: Denmark – Innovation and Knowledge, Germany – Saxony, France – Île-de-France, Spain – Castile and León, Lithuania – Economic growth, Poland– Innovative economy, Czech Republic – Business and Innovation, Italy – Apulia. The three policy instruments subject to theory-based impact evaluations are: Support for technological innovation – Poland ("Technological Credit"), Aid to investment projects by micro and small enterprises in Apulia – Italy ("Title II"), Support for industrial R&D and innovation in Castile and León – Spain.

[35] See the First Intermediate Report.

**A dominant trade-off in ERDF programmes is between focusing on support to research and innovation, on the one hand, and growth of firms, on the other**. Promoting innovation and support for SME growth often overlap, as the former can be a driver of the latter, but the two policy areas are distinct conceptually and can be supported by different, tailored, policy instruments. As extensively discussed during the seminar with a sample of Managing Authorities, **this trade-off translates into the need to define a specific targeting strategy**: on the one hand, one may choose to focus on the most dynamic firms and best performers, in particular in terms of research and innovation capacity (typically high-tech enterprises) with the aim of triggering positive effects through spillovers on the territorial productive system; on the other hand, it could be preferred to target low-tech developed firms that are less capable and have little previous experience in innovation, with the aim of overcoming their barriers to competitiveness and growth. Managing Authorities recognise that supporting the best performing firms may be rewarding, but can also have negative effects in terms of increasing regional disparities. By the same token, targeting low or medium-low tech firms can potentially lead to a higher marginal return if successful, but there is a greater risk of being ineffective due to a lack of capacity to turn the funding opportunity into a development strategy. This trade-off is widely discussed in literature as the 'innovation paradox'.[36] For this reason, support to SMEs is not perceived by stakeholders in the field to be necessarily intended to favour innovation and target high-tech firms since this may lead to a territorial cohesion problem and a bias towards more prosperous territories within EU regions.

Case studies illustrate some examples of explicit targeting strategies. Focusing on low-tech SMEs was dictated by observation of the existing enterprise base and the need to cope with their requests in Lithuania. The objective was to build a competitive advantage on the basis of labour-intensive technologies in traditional sectors that were in need of upgrading.[37] It was felt that potential elsewhere was limited in that knowledge producers were mainly located in the public sector and there was a lack of critical mass, especially in the direct funding of R&D. In Poland, it was perceived that for countries operating behind the technological frontier, the returns from innovation were particularly high in low-tech manufacturing sectors, as catching-up processes could enable them to improve productivity and competitiveness, achieve cost reductions and access new markets. In the service sector, however, where many of the actions intended to improve productivity involved ICT developments, the targets in Poland tended to be more of a high-tech, knowledge-intensive nature. In the Czech Republic, structural problems – the 'branch-plant syndrome'[38] – inhibit the ability of third tier suppliers to innovate and diversify. This situation is exacerbated by limited inter-firm linkages and science-industry links.

#### 4.1.2 A weak strategic vision

While it was reasonable to expect that ERDF strategies would have tackled this issue more directly, **evidence from the analysis of 50 OPs and case studies does not show a clear-cut strategic choice in favour of a well identified general objective**. The needs analyses presented in the Operational Programmes acknowledged the great variety of needs of local SMEs, especially distinguishing between the more competitive and dynamic enterprises that are usually concentrated in medium or high-tech sectors, and the ones suffering from structural weaknesses, often small and micro enterprises in more traditional sectors. However, a clear targeting strategy offering an explicit theory of change was generally lacking.

[36] Landabaso *et al.*, 2002.

[37] Here, about 80% of the ERDF assistance went to the low/medium technological intensive sectors.

[38] SMEs are part of national and multi-national value chains and are oriented exclusively to the assembly of standard goods without any strong spillover effects.

As is well-known, the strategic objectives of the OPs were formulated at a time when the debate in European policy forums was oriented by the re-launched Lisbon Agenda. This placed the development of an innovative economy and a vibrant SME sector at the core of policy thinking. As a matter of fact, in terms of the broad formulation of objectives, the OPs have similar overall objectives and the theories of change emerging from the OPs were mostly referring to the promotion of innovation as the key strategic objective and driver of structural change. In terms of long term strategic vision, however, the proposed strategies generally did not offer a solution to the trade-off just mentioned.

**Table 3. SME-related general objectives in different OPs**

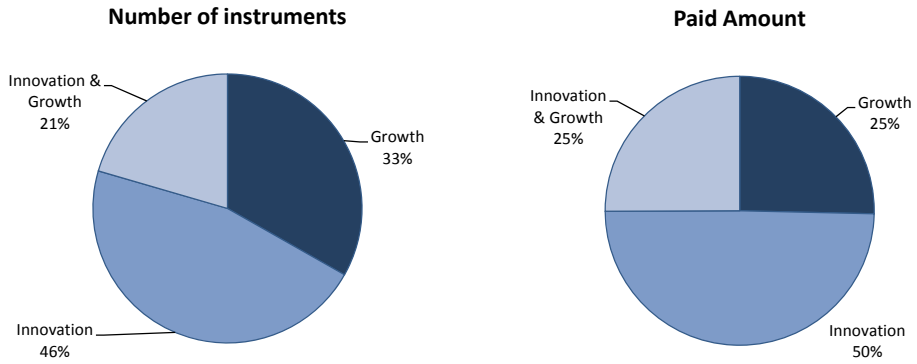
| | | |
|---|---|---|
| Austria - Steiermark | Operational Programme ERDF - Steiermark 2007-2013 | One of the two main objectives of the OP is the establishment of an innovative and more knowledge-based economy. To this end, the OP focused on tackling the barriers hampering the development of SMEs in the region. In particular, it aimed to i) remove the restrictions in the financing of strategic investments; ii) improve the skills of human resources for innovation; iii) strengthen the innovation capacity of SMEs as a prerequisite for greater involvement of SMEs in international production networks; iv) improve conditions for enterprise innovation in rural areas that are lacking agglomeration effects; v) promotion of technology-oriented start-ups. |
| Bulgaria | Operational Programme ERDF - Development of the Competitiveness of the Bulgarian Economy | The OP was aimed at improving the competitiveness of the Bulgarian economy. In order to achieve this objective, support was envisaged for improving the productivity and growth potential of SMEs, assisting the development of innovation; helping the transition to a knowledge-based economy and introduction of new technologies; and improving the business environment. In order to stimulate SME development and innovation, the OP contributed to: i) increasing R&D spending as a percentage of GDP and the level of technological intensity of industry; ii) increasing the share of SMEs introducing innovations; iii) addressing the difficult access to finance for SMEs; iv) strengthening the connection between SMEs-science-education sectors; v) promoting entrepreneurial activity. |
| Spain | Operational Programme ERDF - Research, Development and Innovation for and by Enterprises - Technology Fund | The overall goal of the OP was to increase the competitiveness of the Spanish economy, bringing the innovation performance of industry and the service sectors closer to the level of the leading industrial EU Member States. In order to remove barriers that hamper the innovation capacities of Spanish companies, especially SMEs, the OP pursued the following specific objectives: i) to achieve critical mass and collaboration on innovation that could help to share risks among enterprises; ii) to improve the access to financial resources for innovation; iii) to promote knowledge transfer from universities and research institutions to smaller enterprises; iv) to develop a stronger innovation culture and improve human capital in preparation for managing innovations. |
| France - Aquitaine | Operational Programme ERDF - Aquitaine | The overall goal of the OP was to increase the economic competitiveness and employment of the region by providing support to intervention capacity for research and technology transfer and by targeting interventions geared to innovation and the information society, at the same time focusing on the environment and sustainable development. In order to achieve these objectives, two out of four priority axes were targeted to increasing research and innovation in SMEs, by better exploiting research results and making innovation the driving force of enterprise and territorial competitiveness. |
| Slovakia | Operational Programme ERDF - Competitiveness and Economic Growth | The overall objective of the OP was to maintain and foster the competitiveness and efficiency of industrial production and the energy sector, as well as the potential for tourism and other selected services, through innovation. Actually, the main barrier to be tackled by the OP was the low level of innovativeness of the country which lagged behind advanced states in terms of innovation performance and effective transfers of R&D results into innovation processes. The OP thus sought to support SMEs' innovation process and to improve the protection and use of R&D results. |

Source: CSIL based on First Intermediate Report (Volume II).

The description of the main goals pursued by the implemented **policy instruments** shows that they **were almost equally spread between innovation and growth-oriented strategies**. As shown in the First Intermediate Report, around half of the ERDF policy instruments analysed (see Section 4.3) and the public contribution disbursed for them, were predominantly geared to objectives specified in terms of SME innovation. The other half were more oriented towards growth objectives, among which innovation was referred to as one way of promoting SME development. In a few cases, policy instruments pursue objectives other than business innovation and growth, such as territorial cohesion (by trying to induce the

development of economic activity in specific territorial areas) and environmental sustainability (particularly by promoting eco-innovation within SMEs).

**Figure 20. Number of policy instruments and public contribution amount paid in the 50 OPs by main objective**




Source: CSIL.

As extensively described in the case studies, this dichotomy did not reflect clear-cut strategic choices made by different Managing Authorities, but rather a prevalence of a dual or even overlapping approaches in targeting objectives of both innovation and growth within the same programmes. Many of the schemes that involved SME support were seen as part of a process of promoting innovation. For example the OP for Saxony primarily conceived SME support in terms of collaborative and non-collaborative research though there were also more traditional SME measures, such as promoting market access for SMEs and creating and developing business networks. Similarly, of the six axes in the Polish OP 'Innovative Economy' that supported SMEs (out of a total of nine) five were directed at R&D or innovation support of different kinds, with the other axis directed at supporting the Polish economy on the international market.

**Even within the OPs where there was a clearer distinction between innovation and SME support, the different measures were seen to operate alongside each other**. In Lithuania, where 38% of funding went to access to finance measures and a further 30% to up-grading technology and processes, there was also direct support for R&D and R&D infrastructure, for networking and for clusters promoting innovation. Similarly, in Apulia (Italy), alongside aid to investment in micro and small firms and credit guarantees, there was support for research by SMEs and measures to promote consulting services for technical innovation, regional innovation partnerships and aid for access to ICT. The Spanish region of Castile and León also had this dual approach so that while supporting its many micro enterprises in the recession, it also attempted to provide more direct support to innovative companies.

**Some exceptions were, however, evident**. The clearest case was the Danish OP 'Innovation and knowledge' which set out directly to support innovation and the knowledge economy and saw the creation of new entrepreneurs and the development of existing businesses as key elements in this process. The overall design of the Danish OP was particularly solid if regarded in the light of the relatively low total volume of ERDF funds that were, however, well concentrated on business support and with a clear and focused strategy. In contrast, the regional OP of Île-de-France, a region which shares many characteristics with Denmark including the low volume of ERDF, the relatively better socio-economic context and

good innovation performance, remained open in terms of strategic choices addressing both the promotion of poles of excellence for innovation and territorial cohesion.

An important element contributing to shaping the context in which some SME operate that was not taken into account when designing the ERDF strategy of intervention was the presence of large enterprises. In principle, these offered the potential of joining their subcontracting base or benefitting from spillover effects. Even in the Czech OP 'Enterprise and Innovations' the role of foreign direct investment by large enterprises and the structure of the SME fabric into different tiers of subcontractors, an important feature of the Czech economy, was barely taken into consideration in the underlying theory of change. This was also due to the fact that measures addressing large enterprises and those addressing SMEs were two completely separate systems relying on different practices and tools. However, **if attention was generally dedicated to SMEs when devising support to large enterprise, as noted in WP4, the reverse did not hold, with little consideration of the potential role of large enterprises in shaping SME performance**.

#### 4.1.3 Poor synergies with the existing policy mix

A weak strategic vision was also apparent from the poor synergies with other existing policies at national and regional level. First, **the distinction between what was supported by national programmes** (including ERDF ones) **and what was supported by regional ones did not appear to be sufficiently justified**. In a number of cases in fact national or multi-regional programmes added to regional ERDF funds, often with an overlap between the two layers of support.

The same applied to the synergies with other EU Funds, for example with the European Social Fund (ESF) or the EU Framework Programmes for Research. More specifically, the ESF was used to support the generation or improvement of skills in the sectors supported by the ERDF; for example, by supporting the hiring of researchers by the firms with a system of vouchers that could be combined with an investment plan funded by the ERDF instruments. Albeit with some exceptions (e.g. Denmark, see Section 5.2.2), **the possibility of combining the different source of funds for the same investment was, however, generally at the request of individual beneficiaries rather than systematically pursued** and promoted as a standard procedure by the Managing Authorities. Surprisingly, the reprogramming and the emergence of pressures to focus on safeguarding employment as a response to the crisis period, generally did not strengthen the synergies with those ESF measures addressing this objective.

Along the same lines, little evidence of complementarity with the Research and Technological Development Framework Programme was found apart from the fact that SMEs accustomed to public support screen the available options and can thus cumulate the two funding sources. A relation of substitution was even identified in selected cases with a preferred recourse to ERDF, which was considered to be less demanding and exclusive than the Framework Programme for financing R&D projects.

### *4.2 Reprogramming and fine tuning*

**Reprogramming after the crisis generally reinforced the priority placed on the general objective of enhancing growth and competitiveness of SMEs.** The analysis of 50 OPs observed a shift of resources away from research and innovation to more generic growth objectives. With the exception of six out of the 50 OPs under consideration[39], some changes in either the total initial allocation or in the distribution of resources among the

[39] The Danish OP Innovation and Knowledge, the Dutch OP West Netherlands, the Austrian OP Burgenland, the OP Northern Finland, the OP Central Sweden, the Swedish OP Upper Norrland.

priority axes were made in most of the programmes, in order to tackle the adverse financial and economic context. Such a shift was echoed in the case studies. Examples of national and regional OPs where this shift clearly occurred are those in the countries most severely hit by the crisis, in particular Portugal (OPs 'Factors of Competitiveness' and 'Norte'), Southern Italy (OP 'Apulia'), Czech Republic ('Enterprise and Innovations' OP), but also Austria (OPs 'Burgenland' and 'Steiermark') and Belgium (the regional OP 'Hainault'). Here the reprogramming led to a reinforcement of measures focused on improving competitiveness and employment, seeking to give a more forceful response to the ongoing economic and financial crisis. The shared opinion in the regions severely hit by the crisis was that without the support of ERDF the loss of jobs possibly could have been greater than actually experienced.

In particular, **more resources were allocated to strengthening private productive investment** (new machinery, new construction) **and stimulating employment** (creation or, more often, safeguarding of jobs in the short term) detracting from funding for R&D and more ambitious innovation goals. **In other cases**, as revealed by the case studies on the Lithuanian 'Economic growth' OP, the Saxon OP and again the Apulian OP, for instance, **the reallocation of funds was directed to instruments aiming to increase enterprises' access to finance**, especially SMEs, given their low absorptive capacity during the credit crunch crisis. Reducing the risk of credit providers was considered to be crucial in facilitating access to credit, not only to increase private investment but mostly to support working capital and cash rebalancing. In this context, it is worth noting that instruments with relatively simple eligibility criteria and smooth and rapid application and selection processes were preferred, because of their quick absorption capacity. This was valid independently of their mode of delivery (see below for the different delivery modes).

**There were also examples of OPs where changes involved not the types of policy instrument, but the eligibility and selection criteria of the same**, generally relaxing them in order to downscale the expected results and increase the potential reach of beneficiaries. In general, selection criteria were shifted more and more towards ensuring SME survival rather than promoting innovation or more ambitious, growth-enhancing, investment projects. An example was provided by the investment support instrument under the Saxon OP. While the initial definition of the instrument allowed support only for projects creating jobs, the new definition also allowed for projects safeguarding jobs. Similarly, in Apulia the logic of the policy instrument providing aid to investment by micro and small enterprises in traditional sectors was revised in order to back vulnerable, but financially solid, enterprises. The aim was to help them to resist the effects of the downturn and safeguard employment, moving away from the original aim of generating employment and stimulating business growth. Revisions of eligibility criteria were aimed at attracting a larger number of SMEs to apply. The Greek authorities, for example, decided to extend the eligibility criteria of a number of policy measures to also cover working capital.

**The capacity to promptly react to emerging needs and to adjust the instruments accordingly was positive and pointed to a high responsive capacity on the part of the Managing Authorities**. Still, this translated *de facto* into a dilution of the initial pre-crisis ambitions and a shift to more generic forms of support.

In some cases no formal re-programming or marked shifts in the objectives and instruments used were observed (e.g. in the Île-de-France and Danish OPs). In the Danish OP most of the instruments were in any case constructed fairly flexibly. This flexibility was used to respond to the increased cautiousness of businesses and their partners resulting from the crisis. At the same time, there were a few examples where **the crisis also acted as a stimulus to new thinking**, leading to additional funding for innovation, deriving from other priorities (e.g. for the Swedish Upper Norrland OP and the national Hungarian OP) or to the formulation of a

series of new instruments based on extended dialogue with stakeholders (e.g. Living Labs), smart buying (pre-commercial procurement measures as reported in some case studies), but also with a key role attributed to creativity and recognising emerging social needs (e.g. there was an increasing interest in measures addressing social innovation, see below for more on this).

### *4.3 High flexibility and long-lists of policy instruments*

The strategies and theories of change are translated into a set of actions. Their analysis provides useful hints on the capacity of Managing Authorities to develop coherent and efficient action plans for their strategies.

The analysis of 50 OPs reveals that a total of **670 policy instruments were addressed to SMEs and their support** (on average 13 per single OP) with corresponding expenditure indicated in the business support codes of expenditure (WP2) over the period under assessment. The table in Annex II summarises the first important pieces of information on the number and the quantitative importance of policy instruments in each of the OPs considered. An initial, striking evidence is that, **not only is the number of instruments particularly high, but there is also an impressive variety in terms of objectives, nature, functioning and implementation features**. The attempt to classify the entire spectrum of relevant actions identified in the 50 OPs was particularly challenging and led to unavoidable oversimplification. Nevertheless, it provides useful insights that were then further qualified by a more in-depth assessment, at the single OP level with case studies, and at the single instrument level with surveys.

As emerged from interviews with Managing Authorities, the list of instruments selected for each programme is the result of the combination of the lessons learned in the past about 'what worked well' in the territory and of the need to adapt and improve the implementation of past interventions. In general, **notwithstanding a certain path dependency, a willingness to adopt new *modus operandi* was observable**. This was particularly clear in the use of financial instruments and more generally on repayable aid. The 'Technological Credit' instrument delivered under the Polish OP 'Innovative Economy', for instance, by providing grants in combination with loans granted by commercial banks, attempted to spread awareness and experience in the delivery of financial instruments both among beneficiary SMEs and financial intermediaries, with a view to progressively replacing traditional grant support during the 2014-2020 programming period. As a matter of fact, Managing Authorities have large room for manoeuvre in designing the delivery systems, not only in terms of individual policy instruments, but also of the overall architecture of the delivery process. The delivery mechanism of Denmark was peculiar in this respect (see Box below).

**Box 3. The Danish Regional Growth Forums**

In 2007 Six Regional Growth Forums ('Vaekstfora') were established to handle regional innovation policies. Each Forum brings together 21 members appointed by the Regional Council and representing the business community, the knowledge and educational institutions, the labour market actors and the local and regional authorities. The role of the Regional Growth Forums was to drive the development and supervision of regional strategies and to contribute to elements of practical implementation, such as the selection of projects that align well with regional priorities, the provision of advice on the appropriateness of proposals and the review of reports on the results of projects.

The action of the Regional Growth Forums was a major factor in ensuring the flexible implementation of the OP 'Innovation and Knowledge ERDF 2007-2013' at the regional level. Acting as intermediary bodies, the Forums were largely responsible for choosing the mix of

policy instruments and their particular components at a project level from a range of items in a fairly rich menu. Such flexibility was a major strength in the whole system, not only allowing a response to local circumstances, based on the knowledge of regional stakeholders and their needs, but also the adaptation of the OP to the relative strengths of the SME and innovation support infrastructure across the regions.

Source: Second Intermediate Report.

Unlike the overall strategies, **theories of change were better designed at the individual policy instrument level and generally referred to the well-accepted theories of market failure affecting EU SMEs**, with an emphasis on the lack of collaboration with R&D providers, information asymmetries, poor access to finance and risk averting behaviour especially towards research activities. However, the weak strategic vision at the programme level often led to the production of a full catalogue of policy instruments. This reflected a major effort by policymakers and public managers to tackle all the possible market failures and tailor the instruments to the specific needs of the different types of SME.

Many of the OPs reviewed contained large numbers of policy instruments, between 22 and 40 (particularly in Greece, Spain, the regional OP Apulia and the national Polish OP). In contrast, the number of policy instruments was lower in thematic OPs, which were expected to have a more focused strategy (e.g. the Czech OP on R&D, the national Spanish OP 'Knowledge-based economy' focused on ICT infrastructures).

Fully-fledged 'catalogues' of instruments customised to the size of the target beneficiaries and their capacity to invest could in principle be justified in the light of the significant amount of financial resources available and greater attractiveness of funding. However, this *per se* does not guarantee that the set of policy instruments chosen were also the most pertinent ones with respect to the challenges at stake in the considered area, in particular as far as the desired change at programme level was concerned. In the end, this **was the reflection of a toolbox approach involving a catch-all rather than a selective targeting strategy** (see more on this below). It also suggests that, in developing the full intervention logic, there was insufficient consideration of the relative effectiveness of the different instruments, i.e. what can be expected to work best to achieve the desired objective.

**The large number of instruments did not necessarily reflect a lack of concentration of funds** and in any case ought to be considered together with the overall volume of ERDF allocation. There were sizeable differences in the financial significance of each instrument. In Apulia, for instance, nearly 90% of the allocated budget was concentrated in nine of the 22 instruments (direct grants for investments, interest subsidy scheme and financial instruments providing generic financial support). A totally different case is Denmark, which had an overall allocation amounting to nearly 10% of the allocation for Apulia.[40] In Denmark by the end of the programming period, there were only seven instruments and two of these accounted for 65% of the allocated budget.

**The coherence and relevance of the range of policy instruments should be assessed in relation to the overall strategy of the programme.** Distributing funding across too many instruments with different aims and targets could result in a huge fragmentation of actions at the expense of pursuing a focused strategy. If the strategy itself is not specified or if it is explicitly dual or open, this is necessarily reflected in the list of policy instruments, as revealed by case studies on the Lithuanian OP, the Polish OP 'Innovative Economy' and the Île-de-France OP. In the latter case, given the limited financial envelope, it would have been advisable to concentrate resources in a smaller number of instruments aimed at supporting

[40] EUR 253 million for the Danish OP 'Innovation and knowledge' and EUR 2,620 million for the regional OP Apulia.

either territorial cohesion or the valorisation of the research potential, with a view to achieving a critical mass.

### *4.4 Funding production factors rather than performance-oriented support*

**The identified policy instruments were mostly directed towards supporting investment in fixed assets or R&D activities**. According to the classification adopted (see First Intermediate Report and, in short, the methodological Chapter 2 of this report), half of the identified policy instruments offered 'support for business creation and development' (26%) and 'support for R&D projects' (23%). The former category comprises instruments for the promotion of business creation, early development, modernisation, structural change, financing e.g. building construction or modernisation, purchase of tangible and intangible assets, employment, advisory services.[41] The latter category includes instruments supporting research and the applied development activities of enterprises undertaken individually or in collaboration with the research centres of other firms, in any field/sector or in a specific one. These instruments contributed to the implementation of an entire R&D project, which, in some cases, continue up to the development and commercialisation of innovation.

Additionally, when considering the volume of the public contribution, instruments supporting innovation (in particular technological absorption) also stood out as particularly important. Unlike the already mentioned category 'support for R&D projects', instruments under this category supported innovation only, without any activity directed at research and experimental development. It included, for example, instruments supporting a technology upgrade in already existing enterprises, as a way of increasing product and process, managerial and organisational innovation, and the commercialisation of innovative products.

The analysis of 50 OPs, echoed by the cases studies, revealed that **the most common approach was to provide funding for production factors rather than for desired changes in economic performance or in ways of doing business**. Policy instruments were generally oriented to increasing and strengthening the main production factors, or inputs, of enterprises, such as capital, labour and technological level, which determines the total factor productivity.[42] Across policy instruments there was extensive recourse to support to capital investment and technology adoption, with the claim that this was *per se* a step forward towards growth. To a major extent, the logic underpinning such instruments was that "input support" could generically contribute to a process of behavioural change, without any further consideration of the types of SME, activities and development patterns.

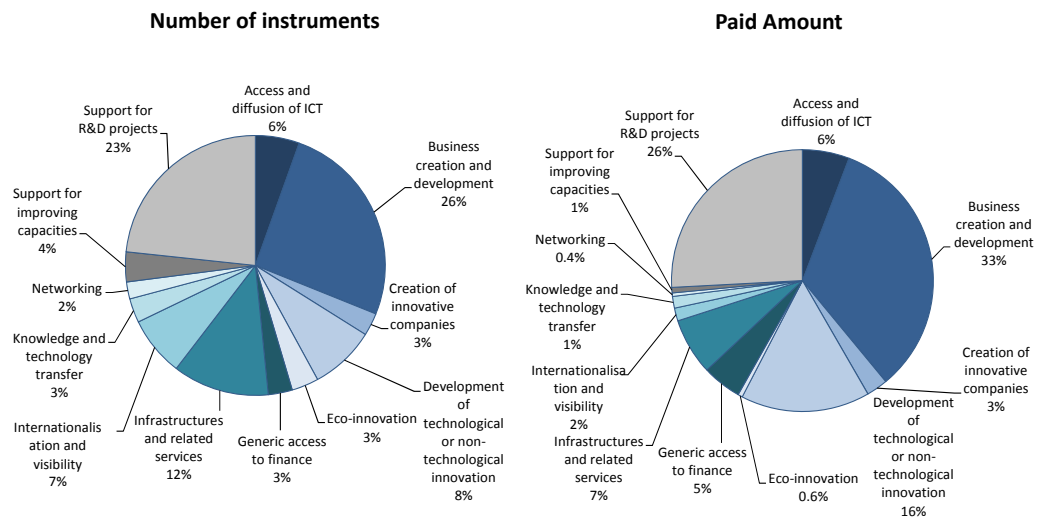
**This logic is over simplistic if not coupled with a well-defined targeting strategy and a clear definition** (in terms of ex-post measurement) **of the desired change**. Evidence from the case studies highlighted the fact that in many cases support to business development was implemented through generic instruments providing funds to implement a range of different investment strategies including improving access to ICT, purchasing new machinery and equipment and improving internal production processes. This was the case of a policy instrument implemented in the Apulia region addressing a wide range of target beneficiaries including retail shops, construction firms and craftsmen and helping them in generically modernising their businesses. In some other cases, however, when the desired outcome was more explicit and defined (e.g. improving technological performance or supporting strategic investments for employment creation) the logic, though still being directed to support production factors, seemed more robust and justified. This was the case, for example, of the

[41] Technological innovation can also be one of the possible activities eligible for financing, even if this is not the main focus of the instrument.

[42] Traditionally, the firm's production function can be expressed in the form $Y=AF(K,L)$, where Y is the production output, K is capital, L is labour and A is total factor productivity.

integrated facility package implemented under the same Apulian OP, which was addressed to medium-sized enterprises and combined different funding schemes to enable the implementation of large industrial plans for business expansion. The same applied to the Polish instruments addressing technology adoption and aimed at the purchase of more technologically advanced machinery and equipment to improve the technological endowment of SMEs.

**Figure 21. Number of policy instruments and amount of public contribution paid in the 50 OPs by main category**




Source: CSIL.

### *4.5 Moving beyond traditional grant schemes*

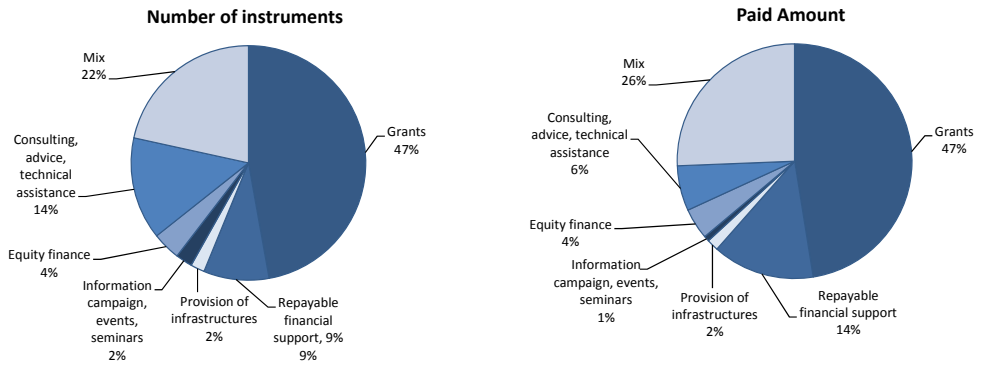
Though there were country and regional differences, **the analysis of policy instruments in the 50 OPs revealed a prevalence of grants**. Slightly less than half of the policy instruments identified and more than EUR 12 billion of the public contribution already paid were delivered in the form of simple grants. However, it is worth noting that the second most common mode of delivery was in the form of mixed support[43] (22%) combining different modes of delivery (typically grants with technical assistance and consulting, loans, but also other combinations such as a grant accompanied with loans). It should also be said that some OPs, such as the Danish OP 'Innovation and Knowledge' did not provide grants directly to SMEs at all, except when these were, for instance, leading a consortium developing a cluster. In general, all the support to SMEs was indirect.

The picture is also more varied in other ways. Despite the general understanding that grant schemes were a rather conventional form of support, case studies revealed that **the prevalence of grants identified in the analysis of 50 OPs concealed more sophisticated patterns with the emergence of combined forms of support, modularisation, and cases of hybrid instruments**. The diffusion of these hybrid and somehow more complex forms of support was indicative of the ability of the Managing Authorities to adjust the form of support tailoring it to the specific needs to be addressed and also of going beyond the usual and more traditional forms of support. According to the evidence collected, repayable and non-repayable aid was sometimes combined in order to

[43] Defined as a combination of modes of delivery.

familiarise SMEs with the former (e.g. the already mentioned Polish instrument 'Technological Credit'). A shift from non-repayable to repayable aid and a concern to modulate the aid intensity was also observed (e.g. in Lithuania). The combination of different instruments was a way to strengthen the intended effect by tackling different needs at the same time (e.g. the need for financial support as well as technical advice) and reflected an administrative capacity to deal with more complex measures. This was also confirmed by the consideration that Convergence OPs made a relatively larger use of grants than Competitiveness and Employment OPs (55% vs. 33% of amount paid) while the combination of different modes of delivery was more common in Competitiveness and Employment areas (41% vs. only 21% in Convergence regions).

**Figure 22. Number of policy instruments and amount of public contribution paid by mode of delivery**




Source: CSIL.

One explanation offered for the large allocations to traditional instruments was that **the crisis discouraged experimentation with instruments that were relatively more difficult and expensive to manage** and outside the experience of most Managing Authorities. Interestingly, among the traditional instruments there were not only grant schemes. Some OPs (e.g. Lithuania, Apulia) witnessed an increase in the allocation of simple and already well-known financial engineering instruments (e.g. credit guarantee funds and revolving funds that distribute subordinated loans) as a result of the crisis. Such instruments were perceived to be effective in supporting enterprises experiencing difficulties in accessing bank credit as well as in disbursing funds in a context of the low absorptive capacity of firms. An interesting case is provided by the Lithuanian OP where loans under the financial engineering instruments turned out to have a relatively easier administration load (three to four times lower) than grants.

Thus, despite the widespread understanding that grants were the simplest form of support, the evidence collected suggested that there were also a number of simple and easy-to-access financial engineering instruments, such as the credit guarantees made available by the Italian OPs. In contrast, there were more 'sophisticated' grant schemes such as those conditional on results (e.g. the integrated facility packages under the Apulian OP which conditioned the aid to the ex-post verification of an ex-ante commitment to employment creation, see Second Intermediate Report and the box below), which were addressed to the support of strategic investment plans and were openly addressing and committed to an objective of employment creation.

**Box 4. Beyond traditional grants**

- The Apulian OP provided Integrated Facilitation Programmes for medium-sized enterprises and consortia of SMEs that provided grants for the realisation of various sorts of investment (including the purchase of machinery, consulting services for innovation, marketing, participation in fairs and ethical certification) aimed at increasing the productive innovation of selected sectors. Support was granted on the condition that the beneficiary increased the number of employees for at least three years after the investment was completed, otherwise the public subsidy would be reclaimed. Ex-post verification was carried out by the implementing body to verify that the commitment to create employment creation had been respected.
- The Sachsen-Anhalt OP comprised an instrument supporting investments in capital assets as well as the provision of employment subsidies, and was conditional on the actual creation of new jobs.
- The Île-de-France OP included an instrument consisting of the provision of grants to incentivise the uptake of SME R&D projects, which became reimbursable if the project was successfully completed.
- In contrast to the French case, both the Portuguese national OP and the regional OP 'Norte' had an instrument supporting productive innovation (both the production of new goods and services and the adoption of new or significantly improved process innovation) through a refundable incentive that could be converted into a non-refundable grant according to the ex-post assessment of the project performance.

Source: CSIL based on the analysis of 50 OPs (First Intermediate Report).

The conditionality to results of the individual policy instruments is a practice widely used, but was considered to be more difficult to handle during the crisis. This confirmed that **it was the logic of support rather than the mode of delivery that influenced the ambition and result orientation of the policy instruments**. This also brought complexity in terms of implementation. As for conditional grants, there was evidence from the case studies that financial engineering instruments conditioned to some specific policy goals (e.g. the goals to mainstream the use of Key Enabling Technologies in industry or to focus on less developed areas) turned out to be less attractive to the financial institutions administering the instruments (e.g. the Lithuanian OP). Actually the fact that instruments were expected to achieve specific policy goals imposed additional restrictions and greater administrative costs on the fund manager. Hence, some capacity was generally in place to design and implement policy instruments that were expected to facilitate behavioural changes in firms rather than support the production function. However, Managing Authorities, implementing bodies and fund managers were more reluctant to have extensive recourse to them, due to the complexity and risk they could bring.

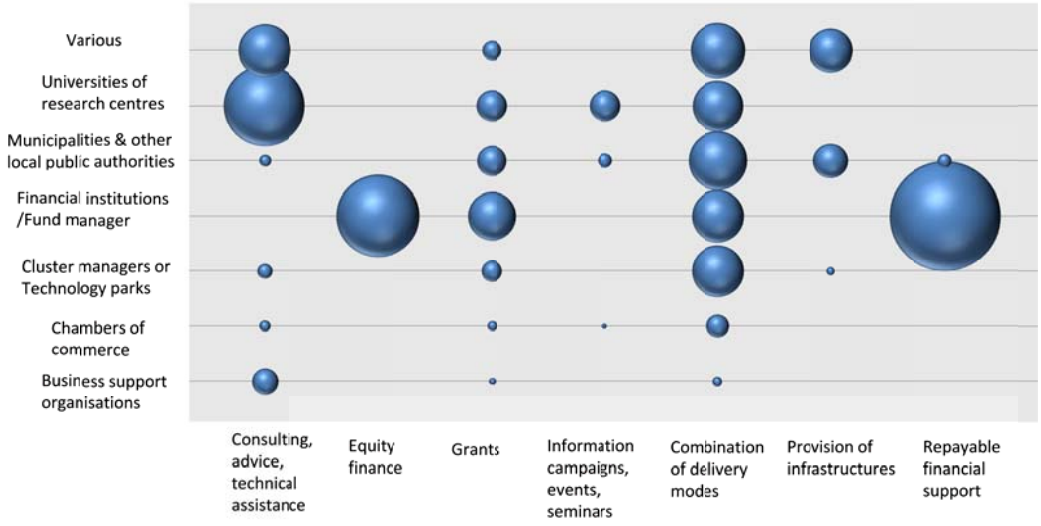
### *4.6 Direct and indirect support*

**Direct support was more common than indirect support.** In the majority of cases the support offered was the direct provision of funds in different forms (i.e. repayable, non-repayable, combined), with a rather limited use of indirect forms of support (i.e. consulting services, provision of infrastructure, information campaigns, etc.). As mentioned, however, in some cases indirect and direct support were combined in mixed instruments, although with a prevalence of the direct support component.

While grants were generally delivered direct to SMEs, in many other cases **intermediaries were in charge of delivering support to enterprises**. It was estimated that intermediaries were mobilised for 37% of the policy instruments (corresponding to 28% of the public

contribution already paid out). Here, the notion of 'intermediaries' was taken in the strict sense, i.e. referring to direct beneficiaries of a policy instrument: they received the budget and were in charge of distributing it to the indirect/ultimate beneficiaries - SMEs. This definition does not include implementing bodies as defined by the regulations.[44] As literature suggests, the rationale for involving intermediaries was that they could facilitate reaching out to SMEs, since they know better their specific needs and capabilities, and could help them to build their skills and capacities, also thanks to their specialised knowledge and expertise.

**Figure 23. Amount of public contribution paid out for the identified policy instruments according to mode of delivery and type of intermediary**




Source: CSIL.

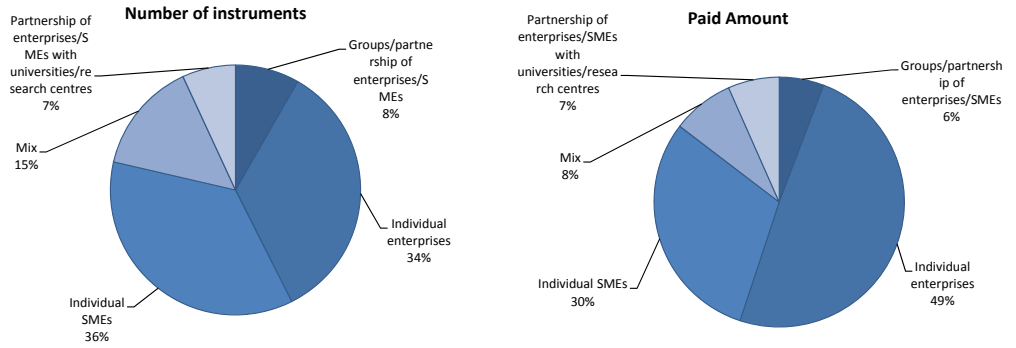
Intermediaries channelling the most significant share of funding were financial institutions and fund managers which were associated with policy instruments providing access to equity finance and repayable financial support. Universities and research organisations were the second most important type of intermediary, generally serving SMEs through consulting services and advice. Instruments delivered through municipalities were large in number, but far less relevant as far as the volume of funds was concerned. They were more involved in the provision of infrastructures to strengthen the business environment, and other forms of support.

### *4.7 Still poor attention to productive 'systems'*

The analysis undertaken revealed that policy instruments were by and large addressed to individual SMEs (including single entrepreneurs) and individual enterprises (both SMEs and large enterprises). In terms of amounts paid, the share of the public contribution to individual SMEs was higher in the Convergence regions (34% against 24% of total public contribution paid in Competitiveness regions). Conversely, in Competitiveness and Employment OPs (e.g. Italian regions of Piedmont and Veneto and the Swedish OPs) there was a greater preference for instruments targeted to a mix of diverse types of beneficiary (27% of the amount paid against only 4% in Convergence regions).

[44] I.e., bodies charged by the Managing Authority with the management of a part of the overall OP budget (e.g., regional development agencies).

**Figure 24. Number of policy instruments and amount of public contribution paid by type of target beneficiary in the sample of 50 OPs**




Source: CSIL.

**No precise target strategies were usually considered with regard to SMEs' size, sectors and other features**. Some exceptions are presented in the Box below. As revealed by case studies, on some occasions territorial location was one of the requirements of potential beneficiaries. This was, for example, the case of the Hungarian policy instrument supporting job creating investment by SMEs in backward regions, or the instrument providing support to investment and job creation for micro enterprises located in low density areas of the Portuguese region of Norte.

**Box 5. Examples of policy instruments targeting specific sectors**

- The Île-de-France OP included an instrument aimed at providing groups of SMEs with services delivered by relevant intermediaries helping them to anticipate (defensively or proactively) structural changes in six specific sectors (called "filières") or in difficult areas considered to be at risk. This instrument accompanied a measure of the National regional development plan (CEPR) called "Plan Filière", i.e. promoting value chains around regional key industries (aeronautic and spatial industries, automotive industry, eco-industries, life science, creative industries, software and complex systems).
- The Greek National OP provided an instrument supporting Greek Technology Clusters in Microelectronics. In continuation from the previous programming period, the instrument supported research and development actions as well as the creation of new firms in the realisation of a sustainable ecosystem of excellence and innovation strengthening the existing microelectronics cluster. Thus, the instrument focused on the areas of semiconductors, nano/microelectronics and embedded systems.
- The Polish National OP 'Innovative Economy' comprised two different but similar instruments supporting R&D projects in the TECH sector (including nanotechnology, new materials and technology, mechatronics, technology and chemical engineering) and in the INFO and BIO sectors, which had been identified as some of the fields of strategic importance for the national economy.
- The Regional OP 'West Wales and the Valleys' offered an instrument promoting specific opportunities for sectoral growth. The instrument was conceived as a tool for identifying natural clusters and providing support to facilitate the growth/development/networking of sustainable tourism along with marketing and business initiatives, which increased the value added contribution of the sector to the Welsh economy.

Source: CSIL based on the analysis of 50 OPs (First Intermediate Report).

The existence of solid and positive relationships with other relevant actors of the innovation system in the territory, such as for example research institutes, or the location within a recognised regional productive system, such as a cluster or other forms of formal or informal agglomeration of firms, was a relevant feature that should have been duly reflected in an appropriate targeting strategy. **Cluster policies or instruments openly addressing regional innovation systems were not particularly widespread.**

**Box 6. Examples of policy instruments promoting clustering and networking**

Denmark was an interesting case as far as policy instruments supporting clustering and networking activities were concerned. Actually, the Danish OP was specifically conceived to support innovation, knowledge sharing and knowledge building, acting in three directions: 1) improving the collaboration between knowledge institutions and enterprises: 2) strengthening public-private co-operation on innovation and 3) promoting cluster relationships. At the beginning of the programming period, in fact, the Danish OP included two instruments (out of nine) specifically conceived to support clusters, which were merged later on. Namely, 'Interaction on Innovation' sought to strengthen public-private co-operation on innovation and improve interaction between stakeholders at various levels: SMEs and knowledge institutions, SMEs and clusters and between SMEs themselves, with a view to establishing networks and centres of competence; and 'Cluster Relationships' sought to promote networks and the formation of clusters of SMEs in particular, clusters of SME supplier networks.

Another example of an OP that supported clustering with a set of instruments was the Romanian National OP Increase in Economic Competitiveness. Here, two instruments were available (one addressing emerging clusters and one innovative clusters). The general aim of these instruments was to strengthen networking and cooperation relations between enterprises, reinforcing value chains and supporting the process of cluster development, by means of different types of support ranging from consultancy services and organising training sessions and/or experience exchange programmes to feasibility studies.

Not only national OPs but also regional ones focused on the promotion of clustering and networking activities. An example was provided by the French Regional OP Midi-Pyrénées which included an instrument aiming to foster the development of regional excellence networks and, in turn, stimulate collaboration of regional SMEs with the world of research and multinational corporations in some priority sectors such as space and aeronautics.

Source: First and Second Intermediate Reports.

**In fewer than 15% of cases, policy instruments supported partnerships among enterprises (including large ones)/SMEs, or between enterprises and research organisations**. Often, despite the objective of promoting industry-science relations, case studies pointed to a difficulty at the programming level in translating this objective into appropriate measures and instruments to support industry-science cooperation. In Lithuania, for example, the objective of developing such collaboration did not result in the adoption of coherent policy instruments corresponding to this objective. Strategic and organisational issues were also identified. Again in Lithuania, the cluster policies failed to effectively support connections with the local knowledge sources (institutes and universities) due to lack of institutional coordination. This could also be justified on the grounds that it actually made more sense for SMEs to develop collaboration with suppliers and research institutes located outside the country, in more mature economies.

**In some cases policy instruments went beyond sectors** (defined in nomenclature such as NACE) **as a traditional reference, and pointed to alternative frameworks such as "ecosystems"** defined as a set of enterprises and institutions linked together through various bonds (in line with the recent notion of 'smart specialisation'). As an example, responses to health and welfare issues may make use of a range of different products, from specially

adapted vehicles to different kinds of medical instruments, together with new and varied forms of software and hardware, all making use of new and different forms of social organisation, which sometimes also combine public and private sector inputs. Indeed many instances of social innovation arose precisely from people working outside of and beyond their traditional silos.

**Box 7. Examples of policy instruments promoting social innovation**

The concept of social innovation is catching on more and more. It means developing new ideas, services and models to better address social issues. Some attempts to support such kind of innovation were already made in the 2007-2013 period, as revealed by the 50 OPs analysed. In this context, an interesting case was the 'ICT Living Labs initiative' supported by the Apulian OP with a financial envelope of EUR 7.2 million. This instrument was specifically conceived as a way to leverage user-driven and open innovation in order to give better technological responses to precise societal challenges expressed by different stakeholders of the Apulia Region, such as public authorities, citizens and consumers' organisations. Eighty approved experimental projects covering all the eight thematic domains were implemented. Selected thematic domains were, for example, 'health and social welfare', 'education', 'environment and territorial safeguarding'. Those thematic focuses were developed building synergies with the regional departments for welfare and social services and were inspired by the pressing social needs expressed by citizens also in reflection of the global economic crisis.

Other examples of instruments supporting social innovation projects were provided by the regional OP West Wales and the Valleys and the regional OP Île-de-France. The Welsh instrument 'Support for social enterprises' provided social enterprises support that might include marketing and awareness-raising campaigns, promotion of best practices, researching new opportunities and helping lead to a culture of financial sustainability. Instead, by means of grants, the French instrument promoted social innovation projects aimed at developing new practices, especially using ICT.

Source: First and Second Intermediate Reports.

However, with only few exceptions, it was evident that there was a generalised lack of clear targeting strategy, not only at programme but also at instrument level. In particular, the overall design of policy instruments and the specific eligibility criteria usually generically referred to, at best, the size and financial capacity of firms, with no additional consideration of innovation capacity, past experience in managing and carrying out investment plans or research activities, export orientation or other characteristics of the firm, sector or specific markets. For example, as shown by literature, in terms of competitiveness challenges there are huge differences between firms providing services or products to the final markets and those producing intermediate goods/services, but this was not clearly reflected in the targeting strategy.

**Despite the general lack of clear targeting, in some cases funds concentrated on specific types of beneficiary as a consequence of eligibility conditions** e.g. type of investment or minimum cost thresholds. Thus, specific sets of enterprises were *de facto* targeted through the very design of a given policy instrument. For example, in the case of grants combined with loans, it was bankable SMEs that were automatically concerned; in the case of policy instruments supporting large productive investment projects, it was medium-sized enterprises that were usually more prepared to implement the investment and guarantee the necessary co-financing.

### *4.8 Towards smart specialisation strategies*

The weaknesses evidenced in terms of strategic vision, selectivity and targeting were addressed in the current programming period by strengthening the thematic concentration on core priorities and, especially, with smart specialisation as an ex-ante conditionality underpinning strategies in the field of SME growth and innovation. This was not only expected to enhance the concentration of priorities into a shortlist, but also to support Managing Authorities in carrying out an appropriate prioritisation of key growth potentials in terms of sectoral specialisation and core regional competences. This would also support the targeting strategy and solve the potential tension between supporting poles of excellence and helping more fragile SMEs to cope with global competition.

While it is too early to assess to what extent the reformed architecture provides effective responses to the highlighted weaknesses, it is worth mentioning that the preparation of smart specialisation strategies was already evident during the past programming period. This was, for example, an ideal model in the case of Apulia where the Smart Specialisation Strategy was prepared between 2012 and 2013.[45] The strategy identified a list of priority sectors for which it aimed to build wide networks with competences for scientific and technological applications.[46] It also points to the exploitation of innovation to overcome societal challenges such as climate change and population ageing. Emphasis on social innovation as well as the prioritisation on a shortlist of regional specialisations influenced the design and implementation of policy instruments in the last couple of years of the ERDF 2007-2013 programming period. This was, therefore, a promising evolution that may well materialise positive results in the near future.

[45] Apulia Region (2014).

[46] Such sectors are Biotech and life sciences, Agro-food, Technologies for Energy and the Environment, Aerospace, Mechanics and Mechatronics, New Materials and Nanotechnologies, ICT, Logistics and Production System Technologies.

# 5 EVIDENCE ON ACHIEVEMENT

This chapter proposes a comprehensive assessment of the achievements of ERDF support to SMEs. In part, it draws from evidence on outputs and results indicators from monitoring systems. However, besides the issue of the quality of these indicators, they are insufficient to account for the specific effects achieved by the variety of policy instruments identified. As necessary complements, in-depth analyses of a representative sample of OPs and policy instruments (eight case studies, and three theory-based impact evaluations using a Bayesian Network Analysis) were carried out, in order to draw general findings on the effectiveness of ERDF policy instruments and factors explaining their success or failure. The main messages arising from the analyses discussed in this chapter are the following:

- The analysis of available data on beneficiary SMEs pointed to a relative mismatch between the Lisbon-related strategic intentions declared ex-ante and the SMEs actually benefitting from ERDF support. Beneficiaries were frequently low-tech enterprises operating in traditional sectors, which often benefitted from ERDF support to catch up or resist the effects of the economic crisis. There were relatively fewer cases of OPs and policy instruments reaching high-tech SMEs with greater potential to grow and innovate.
- The severe global crisis that broke out soon after the beginning of the programming period forced many Managing Authorities to adapt their strategies and use ERDF support to ensure SMEs' survival. This explains the general downscaling of the expected impact of ERDF programmes, observed both in terms of reach and of nature.
- The ERDF contributed to three main types of effects:
    - it helped SMEs to tackle the effects of the economic crisis, providing generic forms of support reaching the widest possible number of beneficiaries (with resulting low critical size) to help them cope with the credit crunch and maintain employment;
    - when focused on speeding up investments or promoting R&D and innovation, the ERDF improved SMEs' economic performance, in terms of turnover, export and profitability;
    - in many cases, the explicit or implicit role of the ERDF was to stimulate a behavioural change in the beneficiary SMEs. In turn, this was expected to affect their economic performance in the long term and also to contribute to wider processes of structural change in the region. Although this effect was far from being negligible and could well have been the real added value of Structural Funds intervention, it was not captured by traditional monitoring indicators.
- Conditions determining the nature and intensity of effects generated by the ERDF related to the degree of targeting and tailoring of the policy instruments to the SME needs and the local context in which they operate, the size and intensity of public support provided, and the role played by Managing Authorities, implementing bodies and other intermediaries. Their ability to dialogue with SMEs in order to better identify and tackle their needs and to accompany them along a gradual process of behavioural change was found to be decisive.

### *5.1 Analysis at aggregate level*

This section presents the evidence on effectiveness available in the monitoring systems and gathered for the purpose of the ex-post evaluation Work Package Zero on the 50 OPs under assessment, and additional information collected for this study on the 670 SME-related policy instruments identified.

#### 5.1.1 Evidence from monitoring indicators

Despite the importance of SMEs in the European economy and the relevance of ERDF in supporting SMEs, there was only fragmentary systematic and robust evidence about SME performance and their impact on EU regional development and regional innovation. On the one hand, there was a lack of consistent and comparable data at a regional level (e.g. Eurostat data at NUTS2 level do not break down by both NACE codes and size). On the other hand, the analysis of 50 OPs and of the eight OPs subject to case studies highlighted the weakness of the monitoring systems in place and showed that **the evidence about the effectiveness of ERDF policy instruments supporting SME growth and innovation *in general* was unsystematic**.

Structured and validated information on achievements was available from the activities carried out within the Work Package Zero (WP0) – Ex-post evaluation of EU Cohesion Policy 2007-2013. However, reflecting the specificities of territorial strategies and reporting systems, the type and availability of relevant indicators varies greatly among OPs. Moreover, the target-setting exercise was not as rigorous as expected; therefore, such data should be viewed with care. Yet, an analysis of available achievement indicators did provide some relevant hints on the challenges of monitoring and evaluating the effectiveness of SME support.

Three main categories of indicator (including the respective targets) were reviewed in WP0, i.e. 'Core Indicators',[47] 'Future Indicators'[48] and 'Specific Indicators'.[49] Twelve of the core indicators could provide some information on the achievements of business support expenditure.[50] In addition, there was the 'Aggregate job' indicator calculated by the WP0 team as the sum of core indicators 1, 6, 9 and 35. However, not all these indicators were available for all OPs. Moreover, only a fraction of the available indicators had both target and achievement values.

Out of the 249 OPs for which target values had been set, only seven OPs achieved all the planned targets referring to business support activities. Conversely, for 74 OPs not one of the target values was achieved. Regional programmes in Spain and Portugal recorded the lowest rates of achievement, while the largest share of achieved targets were concentrated in the Swedish and Finnish OPs. Particularly low achievement was recorded for the indicator 'Jobs created in SMEs': the given target was not achieved in 74 out of the 100 OPs that used this indicator.

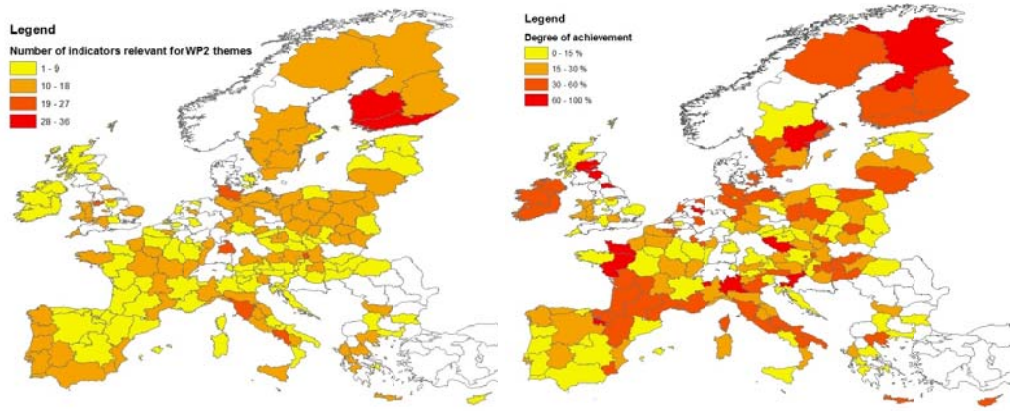
[47] These are those recommended by the European Commission for use during the 2007-2013 programming period. (Working Document no. 2, 2006; Working Document no. 7, 2009).

[48] These are those recommended by the European Commission for use during the 2014-2020 programming period. (Guidance Document on Monitoring and Evaluation, 2014).

[49] These were used by Managing Authorities in specific OPs. The WP0 team classified this vast group of indicators into 11 sub-groups corresponding to the different themes of the ex-post evaluation programme.

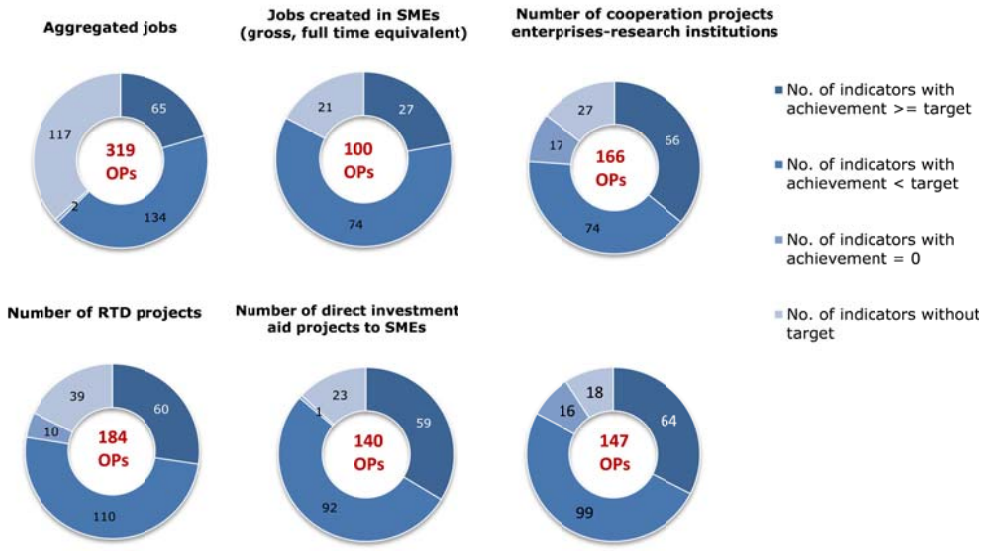
[50] 1) Jobs created, 2) Jobs created for men, 3) Jobs created for women, 4) Number of RTD projects, 5) Number of cooperation projects involving enterprises – research institutions, 6) Research jobs created (preferably five years after project start), 7) Number of projects, 8) number of start-ups supported (first two years after start-up), 9) Jobs created in SMEs (gross, full time equivalent), 10) Investment induced (million Euro), 35) Number of jobs created in tourism, 40) Number of projects seeking to promote businesses, entrepreneurship, new technology.

**Figure 25. Number of core indicators related to business (SME) support expenditure set by OP and share of core targets related to business (SME) support that have been achieved**




Note: The right-hand map considers only indicators with available target values.
Source: CSIL based on WP0 dataset of indicators.

**Figure 26. Achievement of selected core indicators**



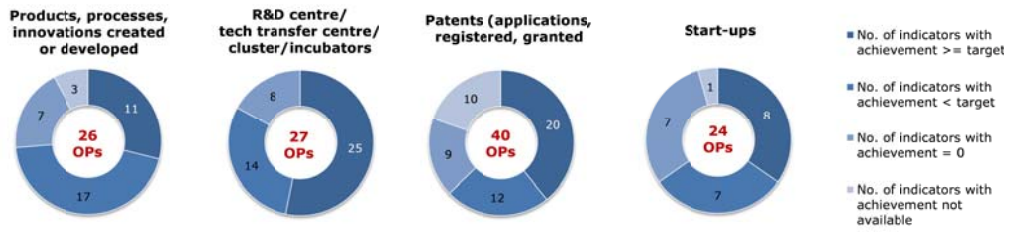

Source: CSIL processing based on WP0 dataset of indicators.

As to the specific and future indicators, according to the classification made by the WP0 team, there were 3,297 different indicators across all the OPs, of which around 190 specifically referred to SMEs.[51] Overall, for nearly 80% of the specific and future indicators both target and achievement values were available, of which 41% recorded an achievement value that exceeded the target. Among those with an achievement value below the target, 15% recorded zero achievement and for 5% no achievement value was available, which in some cases may also mean that it was too early to obtain any results since a number of later-starting projects were still ongoing.

[51] This has been estimated with a semantic analysis.

Despite the fact that the large majority of indicators were specific to one particular OP, there was a shortlist of broad categories to which these indicators could be referred. For instance, a number of indicators[52] could be grouped into three broad categories, i.e. 'Products, processes, innovations created or developed', 'R&D centres, technology transfer centres, clusters, incubators supported', 'Patents' and 'Start-ups', and thus some information about the general degree of achievement of these categories could be provided.

**Figure 27. Achievement of broad categories of specific and future indicators**

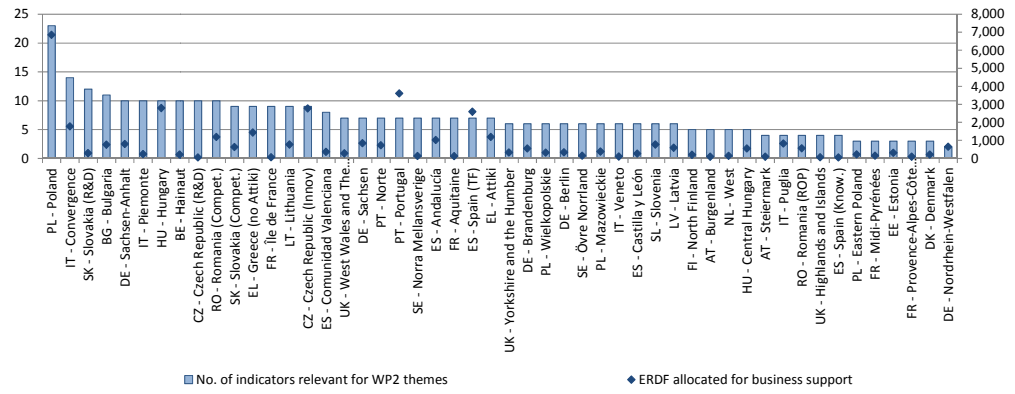



Source: CSIL processing based on WP0 dataset of indicators.

The four groups of indicators showed a low degree of achievement, with fewer than 40% of indicators under all the three categories meeting (or exceeding) their target. Among the indicators that were still below the target value, a significant proportion recorded a nil achievement value, especially those in the category referring to 'Patents'.

Narrowing the analysis to the selected 50 OPs under evaluation, the variation in the number of core, specific and future indicators monitored under each OP and relevant to SMEs was large and it did not seem to reflect the amount of funds allocated to business support.

**Figure 28. Number of core, specific and future indicators and ERDF funds for business support (EUR Million) in the sample of 50 OPs**



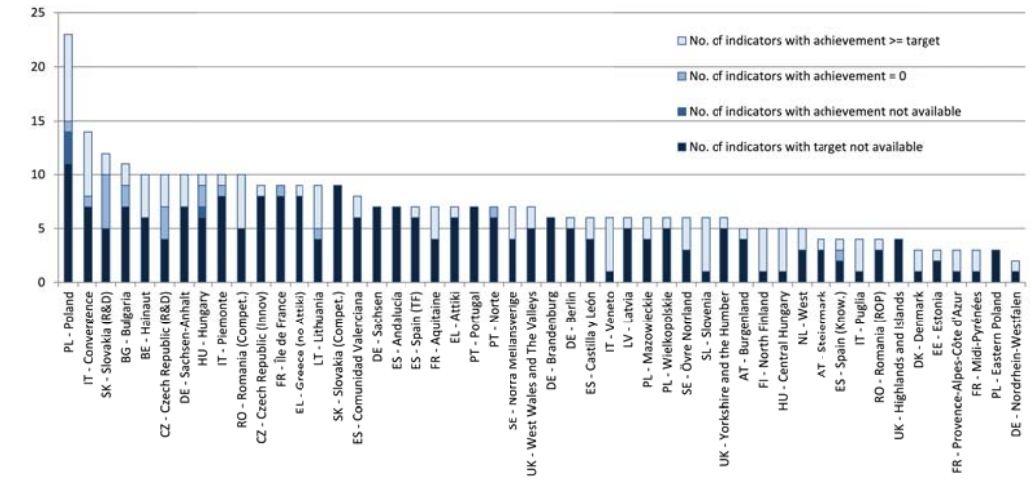

Note: This graph considers the six core indicators presented in Figure 26 and the specific and future indicators falling in the four broad categories presented in Figure 27.
Source: CSIL processing based on WP0 dataset of indicators.

In terms of achievement, the better performing OPs seem to have been the Polish national OP 'Innovative Economy', the Slovenian programme, the regional OP Veneto (Italy), Northern

[52] Considering all the categories, i.e. core, future and specific.

Finland and Central Hungary. Yet, for a large number of indicators no target value was set, which prevented any consideration of their degree of achievement.

**Figure 29. Achievement of core, specific and future indicators in the sample of 50 OPs**



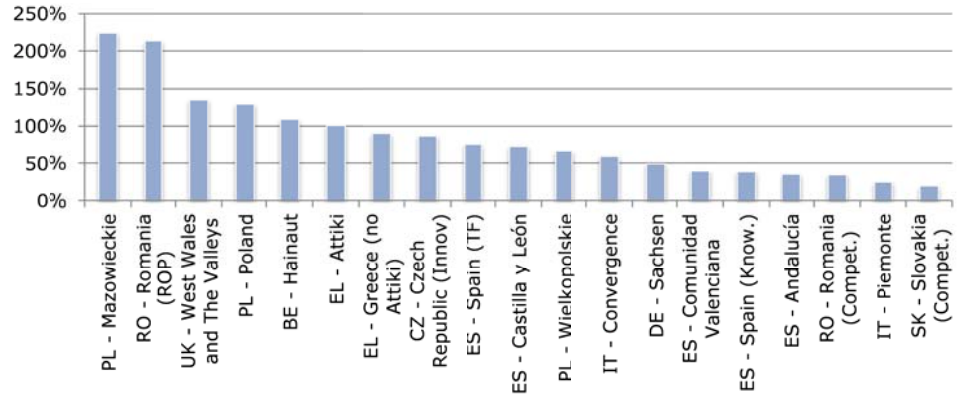

Note: This graph considers the six core indicators presented in Figure 26 and the specific and future indicators falling in the four broad categories presented in Figure 27.
Source: CSIL processing based on WP0 dataset of indicators.

In terms of employment, the 50 OPs contributed to creating nearly 388,000 jobs, i.e. approximately 50% of the reported jobs created by all the ERDF OPs. Nearly 40% of the total was created by the Hungarian OP Economic Development, the Spanish Andalucía OP, the Czech Innovation Programme and the German Nordrhein-Westfalen OP.

**When looking at the reported jobs created in SMEs (gross, full time equivalent), the selected OPs declared that they contributed to creating nearly 151,000 jobs, i.e. approximately 55% of the reported jobs created by all the ERDF OPs**. The Spanish Andalucía OP and the Hungarian OP Economic Development were those where there was the largest number of reported jobs in SMEs.

Based on the reported data, the degree of achievement for the indicator 'Jobs created in SMEs' is low. Among the nineteen OPs for which the indicators have both target and achievement, only for four OPs, i.e. the Romanian Regional OP, the Polish Mazowieckie, the UK West Wales and the Valleys, and the Polish National Programme, was the reported target number of jobs created in SMEs declared to have been met or exceeded. This result raises concerns, in principle, but should be interpreted with much care for a number of reasons: first, for some OPs the number of jobs created in SMEs was not collected separately but it was merged with the more general indicators monitoring the overall jobs created thanks to the OP contribution; second, a number of projects contributing to the creation of new jobs were still ongoing, as shown by the analysis at the policy instruments level; third, in some case there were concerns about the meaningfulness of the initial targets; finally, **a proper assessment would require looking at the net effects of EU support**, i.e. taking into account also the number of jobs that would have been lost during the crisis without the ERDF intervention. Ideally, only a counterfactual analysis could provide definitive evidence on this issue.

**Figure 30. Degree of achievement of the indicator related to jobs created in SMEs**




Note: The considered indicators, their target and achievement values are available only in 17 OPs out of the sample of 50.
Source: CSIL processing based on WP0 dataset of indicators.

### 5.1.2 Assessment of the evidence of achievement of policy instruments

The monitoring indicators presented in the previous section were not always available at policy instrument level, but at a more aggregated level (OP measure or Priority Axis, for example summing the effects of instruments addressed to SMEs with those addressed to large enterprises). This prevented the attribution of certain outputs and results to single instruments. Moreover, the monitoring indicators collected by the Managing Authorities were often not relevant to determining the achievement of the instrument's intended objectives. For example, the number of jobs created in beneficiary SMEs was not necessarily useful in determining whether an instrument intended to increase internationalisation, for example, was effective. To this end, the increase in exports would have been a more suitable indicator. In a number of cases, some evaluation studies were performed at the policy instrument (e.g. Poland) or project (e.g. Denmark) level, but these were exceptional cases. Moreover, their quality and methodological rigorousness is disputable.

To remedy this lack of evidence at policy instrument level, an assessment of the quality of evidence available was performed in the context of this study to determine the extent to which each policy instrument was successful in achieving its goal (the detailed analysis is available in the First Intermediate Report). This assessment is based on data and information contained in the monitoring system (monitoring indicator targets and achievements) and additional existing quantitative and qualitative evidence retrieved from existing evaluation studies and direct interviews with stakeholders. This assessment was performed for each policy instrument identified in the 50 OPs reviewed: each of the 670 identified policy instruments was rated on a scale from A to D, reflecting the quantity and quality of available evidence accounting for the achievement of the instruments' intended objectives.[53]

Overall, 12% of all policy instruments showed robust evidence of positive achievements (score A). **The largest number of instruments for which evidence of positive achievements was available were those supporting SME R&D projects and business creation and**

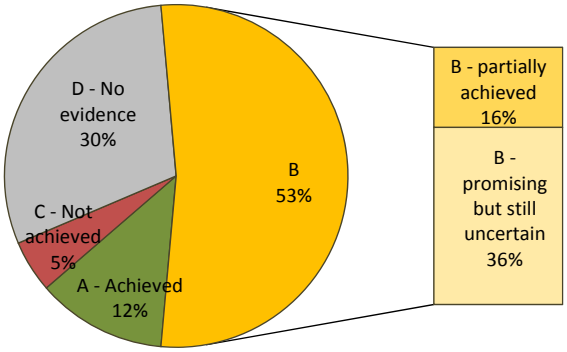
[53] The description of the scores is as follows: A: The policy instrument has achieved or exceeded the expected effects on SME production inputs and performance; B: The policy instrument has partially achieved the expected effects on SME production inputs and performance; alternatively, there are some preliminary indications that the instrument could achieve at least some of the intended effects; C: The policy instrument has not achieved the expected effects on SME production inputs and performance; D: There is no evidence about the effectiveness of the policy instrument.

**development**. These were also the types of instrument where the largest share of public financing was allocated and already paid out, as illustrated in Section 4.4).

Five percent of the total policy instruments were assessed as ineffective (score C). The most common reason behind such a negative assessment was the low demand by potential target enterprises, causing, in some cases, the discontinuation of the instrument. **The economic crisis negatively affected the performance of some instruments** too: for example, a number of instruments introduced by the Greek OPs failed to reach the desired outcomes due to the difficulties of SMEs in accessing co-financing credit.

For the majority of policy instruments, no conclusive assessment of the achievements can be provided, either because there is a lack of any sort of evidence about the possible effectiveness of the instruments, but mostly because it is still too early to provide a conclusive assessment. Interestingly, more than half the instruments regarding generic access to finance fell under this 'no conclusive achievement' category. In fact, while output indicators suggested that the target number of supported companies had been achieved, no evidence existed on the capacity of the instrument to affect the performance of SMEs. This was consistent with the logic of the instrument: **having practically no conditions on the use of funds, usually no effective monitoring system was in place to describe and quantify the results of support**, unless proper evaluation studies were conducted.

**Figure 31. Score on the achievement of policy instruments**




Source: CSIL.

### 5.1.3 Characteristics of beneficiary SMEs

Besides analysing the achievements of the policy instruments targeting SMEs, the ambition of the present evaluation study was to map the type of SMEs that actually benefited from these instruments during the 2007-2013 period. To that end, as much data as possible on recipient enterprises available in the OP's monitoring systems were searched and processed to highlight the main characteristics of the SMEs that benefitted from ERDF support.

A total of 222,000 beneficiary SMEs were identified at single policy instrument level. Another 23,000 beneficiary SMEs were detected only for groups of instruments, making the **number of beneficiary SMEs included in the analysis to nearly 246,000**. This figure is an underestimation of the total number of beneficiary SMEs. It refers to about 60% of all ERDF policy instruments identified in the sample of 50 OPs, which are generally those providing direct support to SMEs. Actually, retrieving data on the number of beneficiary enterprises for these 60% was challenging for policy instruments providing indirect support to SMEs, since the monitoring systems kept track of the number of ERDF recipients, which in these cases were

intermediary actors, not SMEs. Overall, data on beneficiary SMEs could only be collected for a sample of 399 policy instruments out of the 670 identified.

Even so, this figure shows that only a **small share of EU SMEs throughout EU28 was reached**. It is about 2% out of a total of approximately 15.7 million SMEs counted throughout countries and regions subject to the evaluation. The range is however quite large: from less than 1% for the Spanish 'Technological Fund' national OP, the French Île-de-France regional OP or the Polish 'Mazowieckie' regional OP, to nearly 10% or more in Lithuania, North Finland and the two Swedish regional OPs of Norra Mellansverige and Övre Norrland.

**The number of beneficiary SMEs by policy instrument is extremely variable**, ranging from one beneficiary of e.g. instruments that promote eco-innovation in the regions of Hainault (Belgium) and Burgenland (Austria), to 8,000 beneficiaries of a policy instrument in the Spanish OP Technology Fund (support to innovative working methodologies) and 9,000 beneficiaries of another instrument ('Guarantee Fund') in the Italian OP Piedmont. The average number of beneficiaries per policy instrument is between 500 and 600.

An analysis of the main features, i.e. size, sector and technological intensity of beneficiary SMEs (where this information was available), revealed that:

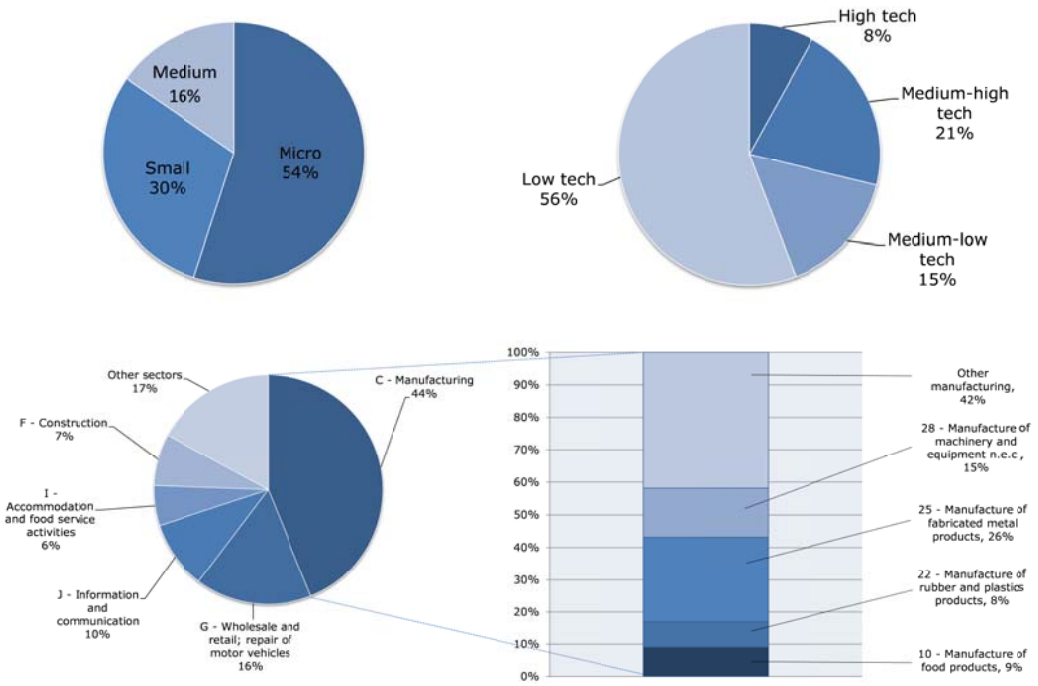
- micro-enterprises represented the large majority, often being the unique beneficiaries, of policy instruments;
- almost half of beneficiary SMEs were in the manufacturing sector; beneficiary SMEs within the manufacturing sector were concentrated in the sub-sectors 'C25 Manufacture of fabricated metal products, except machinery and equipment';
- more than half of beneficiary SMEs belonged to sectors classified as low-tech, i.e. where the share of R&D expenditure over the value added was particularly low;[54]
- in line with the distribution of policy instruments and public contribution paid by their mode of delivery (as illustrated in Section 4.5), SMEs typically benefited from grants or repayable forms of support;
- in spite of the great focus directed towards supporting R&D and innovation activities, as acknowledged at a strategic level and reflected in the number of policy instruments mobilised to this end (see Chapter 4), the analysis of actual beneficiary SMEs revealed that instruments providing generic access to finance were associated with a higher average number of beneficiaries. While targeting a large population of firms, these instruments provided small amounts of aid for a wide range of possible investment options.

From the available evidence on beneficiary SMEs it appears that in most cases, **ERDF instruments *de facto* focused on SMEs in low-tech sectors contributing to catching up or survival of SMEs in traditional sectors, rather than fostering existing growth and innovation poles.** This finding could have different interpretations, which are further discussed in the next sections. It may reflect the anti-cyclical role played by the ERDF aimed at safeguarding employment and supporting not only private investment, but also working capital and cash rebalancing in the aftermath of the crisis. It may also reflect the deliberate intent of some OPs to focus on low-tech SMEs to achieve greater leverage effects (see Section 4.1.1).

[54] It is, however, worth mentioning that, in spite of the classification of sectors at aggregate (even if country-specific) level, there may be innovative companies working in traditionally defined "low-tech" sectors, and non-innovative companies operating in high-tech sectors simply outsourcing their human resources, but not developing their own brands and products.

However, it must be stressed that in some cases there was evidence that, in line with the expectations set out in the initial strategies, some OPs (e.g., the Danish or Île-de-France OPs, see below), or more frequently, some instruments within wider strategies, succeeded in reaching high-tech SMEs. These SMEs were the typical beneficiaries of instruments aiming to support R&D and innovation projects.

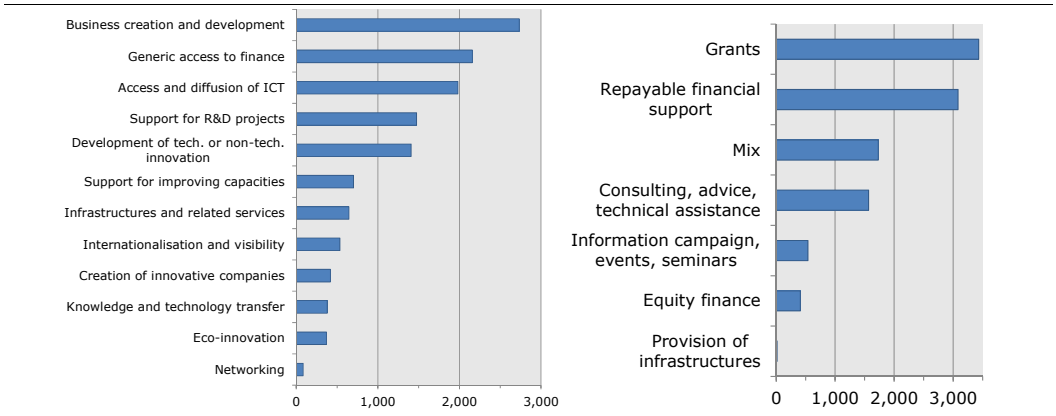
**Figure 32. Share of beneficiary SMEs by size, NACE sector and level of technological intensity[55]**




Note: Based on disaggregated data available for about 100,000 beneficiary SMEs.
Source: CSIL.

[55] As explained in the First Intermediate Report, the technology intensity variable was defined as the ratio between business R&D expenditure and total value added in each two digits NACE sector and for each country.

**Figure 33. Average number of beneficiary SMEs by type of instrument and mode of delivery**




Source: CSIL.

## *5.2 In-depth analysis of ERDF effects*

In order to assess the effectiveness of different forms of ERDF support and the factors and mechanisms explaining the success (or failure) of ERDF interventions, an in-depth analysis of representative OPs and policy instruments was carried out through eight case studies and three theory-based impact evaluations (see Chapter 2). The latter, in particular, were based on data collected at micro-level through direct surveys of a sample of 700 beneficiary SMEs and statistically processed using both traditional econometric techniques and the Bayesian Networks approach.

### 5.2.1 Types of effects

Combined evidence from case studies and an in depth analysis of policy instruments shows that, in a number of cases, ERDF interventions fostered a dynamic of change within targeted SMEs. As explicitly identified by the theory-based impact evaluation of three policy instruments and confirmed by the case studies, effects triggered by ERDF support measures can be observed on both the economic performance of beneficiary SMEs and in terms of behavioural change. The latter, while not necessarily related to quantifiable economic results, may lead to relevant outcomes in the future. In many other cases, the main contribution of ERDF instruments was to enable SMEs to cope with the effects of the economic crisis. Moving from a micro to a macro level of analysis, it is also important to examine what evidence exists on the wider impact of the ERDF in the regional (or national) economy.

#### *5.2.1.1 Effects on SMEs' economic performance*

In certain circumstances the ERDF enabled SMEs to carry out productive investments, some of which were of an innovative nature. The implementation of these **investments brought about various changes in the SMEs' productive and organisational structures**, such as an improvement in the production processes or work organisation, the introduction of new products/services aimed at the market, an increase in fixed capital (e.g. through the purchase of new machinery or the construction of new production facilities) or the employment of new (and perhaps more skilled) workers.

It is worth mentioning that, while job creation is often seen as one of the main desirable and measurable outcomes of public support (as also reflected by the monitoring indicators collected by the Managing Authorities and required or recommended by the European Commission, see previous Section 5.1.1), from the perspective of the SME and its entrepreneur and in line with

economic theory, employment is usually not an end in itself. Rather, it is one of the main inputs of the production function that determines the economic performance of SMEs. In turn, **economic performance can be assessed by considering the increase in sales, exports and profitability achieved by beneficiary SMEs thanks to the investment carried out**. By contributing to the generation of these effects, ERDF policy instruments succeeded in consolidating the competitive position of beneficiary SMEs, in synergy with other EU, national or regional funds.

In virtually all OPs analysed in the case studies, there was evidence that some policy instruments promoted positive economic effects on beneficiary SMEs. For example, three grant schemes promoting business development and productivity in Lithuania (representing a combined share of 30% of total ERDF allocation for the OP) helped SMEs to increase labour productivity and profitability, turnover and exports, as well as jobs and income from sales (BGI Consulting, 2014). In the German region of Saxony, previous studies on the effects of an instrument incentivizing firms to start R&D point to an actual increase in R&D expenditure and intensification of existing R&D activities, and growth in terms of employment and turnover in supported firms (PwC, 2014; Konzack and Soder, 2014; Konzack and Horlamus, 2011). R&D projects brought about positive effects in terms of increasing sales and exports in Castile and León too, although not particularly significantly according to the enterprises surveyed for the purpose of this study. However, almost 70% of respondents expect some further improvement over the next three to five years, confirming that R&D projects usually take longer to produce visible economic effects. In the Czech Republic one policy instrument contributed to sustaining the development of the future competitiveness of its beneficiary SMEs by supporting the purchase of new technology aimed at increasing production capacity by more than 20% (Ministry of Industry and Trade - MIT, 2011). According to the survey carried out on Polish SMEs that received a grant to undertake an investment for productive technological advancement, 95% of respondent enterprises declared that they had achieved at least some effects on turnover, and 85% had increased their export share.[56]

Opinions collected in the field highlight that **the acceleration or anticipation of investment plans was an important contribution of the ERDF** for some SMEs, particularly considering that the instruments were implemented during a period of economic crisis. On many occasions in the case studies, the ERDF was found to contribute to maintaining levels of investment, accelerating its realisation or increasing its magnitude. The ERDF acted as a catalyser enabling SMEs to resume investment plans that otherwise may have taken place only after the end of the recession. This testifies to the partial additionality of the ERDF. Clear evidence was found of the ERDF's role in speeding up investments and the technological advancement of SMEs, in for example, the Polish 'Technological Credit' instrument, analysed through a qualitative survey and a Bayesian Network Analysis.

In principle, stronger additionality can be achieved by the ERDF in the case of R&D projects. **The relatively high risk attached to R&D projects makes public support particularly important in achieving the desired level of R&D expenditure among SMEs, even if this does not necessarily imply the successful commercialisation of research outputs**.[57] In-depth analysis of the policy instrument promoting R&D projects in the enterprises of Castile and León, which is also based on a direct survey of nearly 100 beneficiary SMEs, pointed to the positive role of the ERDF in addressing difficulties in finding sufficient financial resources to start a project. Other risks were, however, evident and could hamper the realisation of positive economic effects, such as the risk of not achieving the research objective, facing unexpected

[56] The detailed analysis is included in the Third Intermediate Report.

[57] This is the distinction, often referred to in literature, between 'input additionality', which refers to the additionality effects of public funds on R&D expenditure and possible substituting/displacement effects, and 'output additionality', which refers to the generation of value deriving from the implementation of R&D projects (Buisseret et al, 1995; Madsen et al., 2008),

cost increases during the project implementation, or market risk especially during a bad and uncertain macroeconomic period.

The following box presents scattered evidence suggesting that additionality was achieved in different circumstances. However, any serious attempt to comprehensively assess the additionality of ERDF intervention would require strict methodological conditions (the realisation of counterfactual analyses in particular) and a reasonable time lag after the implementation of the interventions, which are conditions that this study does not fulfil.

**Box 8. Evidence on additionality of ERDF policy instruments**

- In Lithuania it was estimated that policy additionality was achieved in about 30%-40% of cases of direct support for R&D projects. These involved 270 SMEs (ESTEP, 2015). In another survey 69% of beneficiary firms that received support for business research and innovation concluded that they would have implemented the funded projects even without public support although to a smaller extent or over a longer timeframe (Paliokaitė et al. 2011).
- In Saxony, with EUR 572.3 million worth of public expenditure committed, an instrument supporting investment generated a total investment of EUR 2.6 billion. That is, for each public Euro invested, enterprises invested about EUR 4.54.
- In Apulia a recent study based on a comprehensive counterfactual analysis documented an increase in R&D expenditure following direct support to R&D projects and a partial improvement of beneficiaries' comprehensive performance (Franceschi and Lozzi, 2015).
- In the Czech Republic a study by the Ministry of Industry and Trade (2011) reported that 87% of the projects supported by an instrument promoting the innovative performance of firms would not have been implemented without grants. If they had not received grants, most enterprises would have postponed the implementation of their projects for a few years. As to an instrument promoting the purchase of equipment with higher technical and operational parameters, the Managing Authority estimated (based on a survey) that the dead weight was about 51%, i.e. about a half of the investment would have been implemented without grants. Also, about 33% of companies would have postponed the investment by one to two years.
- In Poland, had there been no support from the ERDF funds, the share of innovative products in exports would have accounted for 3.78% in 2013, instead of the actual 6.7% (WYG PSDB, 2014).
- In the Italian region of Piedmont a counterfactual evaluation was carried out by the Managing Authority (IRS, 2013) to assess the impact of an instrument fostering innovative investment and cooperation among Universities, research centres and enterprises. The study reports an average increase in turnover amounting to EUR 850,000 and an increase in employment of about one employee for each enterprise, compared to the situation without support.

Source: Analysis presented in the First Intermediate Report (Volume II) and the Second Intermediate Report.

Confirming this evidence of partial additionality, another finding of the case studies was that **beneficiary SMEs recording these positive economic effects were generally SMEs that already had the capacity to grow and innovate**. This in part corresponded to SMEs in high-tech sectors, but not exclusively. It was, in fact, more a question of entrepreneurship and absorptive capacity.[58] In particular, it required the managerial capacity to engage in strategic thinking and the operational ability to implement investment strategies. In general, beneficiary SMEs already had investment plans or R&D strategies, and the ERDF (or public support)

[5858] See Cohen and Levinthal (1990) and the literature review in the First Intermediate report.

provided an opportunity to realise them. For example, the beneficiaries of the Saxony R&D scheme were continuous R&D performers. Also, some of the most successful SMEs that benefitted from grants for R&D in Castile and León were small enterprises born as university spin-offs, with a strong background in scientific knowledge and generally high technological intensity, making them better equipped than other SMEs to conduct R&D. Likewise, beneficiaries of the Polish 'Technological Credit' were usually financially robust SMEs, already operating in international markets, and which were, therefore, more likely to successfully complete the investment and achieve positive effects in terms of exports.

The risk in this respect was the generation of a sort of "club effect" whereby it was the same broad set of the "fittest" beneficiaries that availed themselves of public support.

Other issues at stake, which deserve full attention in dedicated studies, have to do with the sustainability of such effects and the possibility of substitution effects. For example, in Lithuania there was no guarantee that the positive effects recorded by grants for business development and productivity (support for international visibility) would be lasting in terms of turnover and employment, whereas substitution effects were probably at stake in a couple of policy instruments of the Saxony OP. Specifically, the policy instrument providing grants to support private investment in Saxony undoubtedly had a positive gross impact on employment, since the support was conditional upon the creation of new jobs. However, it is possible that substitution effects or increasing competition between Saxon firms due to the investment support may have led to employment reduction in aggregate terms. Many other factors may have had an effect as well (alternative public support schemes, demand, wage level), thus making uncertain the assessment of the net employment effect of the ERDF.

#### *5.2.1.2 Behavioural change effects*

SME support can be seen to be a part of a wider process of promoting innovation and growth. As mentioned in the previous section, **ERDF support triggers specific changes in the way SMEs do business**, **some of which are more easily observable and measurable** (such as job creation, or purchase of new fixed assets); **others relate to the entrepreneurs' mindset**, for instance, or his/her willingness to take risks and innovate. These changes can affect the economic performance of the SME (turnover, exports, profitability) in a few cases almost immediately, but more often over a longer time span.

The types of behavioural changes elicited by some ERDF instruments range from the intention to change internal organisational features (e.g. the value attached to having more skilled employees, the increased capacity to deal with complex R&D projects, or the willingness to enter new markets or look for alternative suppliers), to changes in strategy (e.g. applying for other forms of support, starting other investment projects in the future, broadening one's outlook by envisaging options beyond the border), and to a wider change in mindset (e.g. a more open attitude towards innovation and business R&D, learning to cooperate).

Some specific examples can be drawn from the case studies. Prior to 2007 it was not common in Poland for SMEs to take up R&D activities: it was found that 42% of the beneficiaries of the national OP 'Innovative Economy' had never previously performed R&D activities, and they claimed that engaging in R&D was a direct consequence of the OP intervention (PARP, 2013b). One could talk of a "fashion for innovation" promoted by ERDF interventions, inciting SMEs to reorient their business models. In Lithuania the inno-voucher is an example of an innovative measure provoking behavioural change. It had a small quantitative reach (a total public allocation of EUR 3.5 million) but was effective in triggering awareness with respect to innovation. Also, even if R&D instruments provoked few effects in economic terms because of their unimportance in quantitative terms, they contributed to diffusing a business R&D culture. In Castile and León changes in attitudes towards innovation, inducing private expenditure on

innovation and ICT, were recorded, if only in a limited number of SMEs. Also, measures to promote internationalisation provoked some profound behavioural changes.

As in the case of the economic effects addressed above, **the beneficiary SMEs capable of starting such processes of change had to be receptive to the policy stimuli**. They had to already have the necessary managerial capability to take advantage of a given policy instrument to actually turn awareness, intentions and the first changes in organisations or strategies into a durable programme of actions. For example, in Castile and León behavioural changes were focused especially on a few innovative companies with the potential to grow and become high-tech, whereas these changes were found to be more difficult for less dynamic companies in traditional sectors. Lack of entrepreneurial spirit and a strong resistance to change, usually characterising traditional and low-tech SMEs, can make behavioural change challenging. For instance, only a small share of Polish SMEs that benefitted from ERDF support to implement technological upgrades of production processes admitted to attaching a greater value to having younger employees since the investment implementation.[59] While behavioural change was more challenging for traditional and less receptive SMEs, the latter were also the ones for whom the highest returns and greatest improvement in competitiveness could be expected from such a change.

Another issue about behavioural changes was whether they could translate at some point into concrete performance. A change in mindset resulting in the adoption of a new practice, e.g. hiring a researcher, may or may not have translated into improved economic performance, depending on whether the first steps were followed by further steps consolidating a new behaviour into an acquired practice contributing to strengthened competitiveness or innovativeness. This is why **it was important that the policy stimuli not be limited to one single intervention but develop over time to accompany and enhance the changes that occurred in sequence**. This aim could be reflected in the design of a set of interrelated policy instruments, each one addressing a specific objective, but sharing the common goal of stimulating a more structural behavioural change in the targeted SMEs. Even individual policy instruments could be structured in such a way to accompany beneficiaries along a process of change over time. An example of this was the Living Labs instrument included in the Apulian OP (see box below).

**Box 9. Living labs to accompany Apulian SMEs along the innovation process**

Living labs aimed to reduce the time-to-market of innovative products avoiding the Death Valley risk of the innovation process. In Apulia there was strong coordination from the central level and they were implemented by means of a three-step process: 1) the identification and collection of specific societal needs into a dedicated database structured into eight thematic domains was promoted. During this stage, all the stakeholders of the Apulia Region such as public authorities, citizens and consumer organisations could freely publish their needs on the web platform; 2) The Apulian ICT SMEs were invited to submit RDI projects in partnership with the stakeholders who had published specific needs on the platform. The aim of this proposal was to provide specific responses to identified requirements extracted from the former database; 3) The 80 approved experimental projects covering all the eight thematic domains were implemented with the mutual effort and coordination of different actors, including research providers for the development of specific know-how, SMEs supplying the new process or product, representatives of the public sector as potential buyers of the developed innovation and representatives of citizens as final users. The instruments financed not only the final stage of product development, but all the stages conducive to the production or innovation.

Source: CSIL.

[59] This is in line with the findings of a recent study by the European Parliament (2015), specifying that Polish employers are generally reluctant to employ young and inexperienced people.

**A specific case of behavioural change that the ERDF is traditionally supposed to promote is the development of industry-science relations**. Even though promoting network and cooperation ranked high in the programmes' intervention logic, the aggregate analysis of policy instruments mobilised in 50 OPs revealed that they generally targeted single enterprises or SMEs (see Section 4.7).

Behind difficulty at the programming level in translating industry-science cooperation into appropriate measures and instruments noted in Section 4.7, it appears, more fundamentally, that whether there are traditions or a culture of cooperation matters. The Czech Republic is an example where this was missing. Low social capital in Poland and Lithuania was also identified as an obstacle to foster effective industry-science cooperation. In this respect, the case studies corroborated literature by finding a specific reluctance of academia to move constructively towards the business sphere, rather than the other way round. The culture within academic institutions is often to blame, especially where this considers pure research and publications as more valuable than interaction with enterprises and the community. There is evidence that universities or research organisations were not always good at responding to SMEs needs (e.g. Île-de-France, Poland). Difficulties were found even in Denmark where there is a strong culture of cooperation, and a strong commitment to the triple helix model at a policy level. In fact, there was also a marked difference between knowledge institutions that had developed a tradition of working with industry, and those where success was defined in narrowly academic terms.

That said, different examples showed that under specific conditions, successful industry-science relations could take root. Acknowledging the starting positions of SMEs was one of these conditions, as illustrated by the policy instrument supporting industrial R&D in Castile and León. The instrument was designed with the idea of softly pushing the SMEs along a pattern of behavioural change in their ways of carrying out R&D activities. Newly innovative enterprises, with no previous experience in implementing R&D projects, were encouraged to undertake an R&D project and were duly supported through a dedicated "line of action". Instead, enterprises that had already implemented previous R&D projects were encouraged to continue with their R&D activities, but also to take a step forward and to attempt to implement larger, more complex, riskier and possibly collaborative projects, so that at the end of the project they were capable and experienced enough to embark on large collaborative projects at a national and European level. The results of the survey of beneficiary SMEs indicated that a learning process was in place and that the propensity to collaborate was actually increasing. Cooperation with universities happened more often with enterprises born as university spinoffs, since they clearly maintained strong ties with the academic environment. Similarly, the more successful cluster developments promoted by the Danish OP showed evidence of a learning relationship between the enterprises, knowledge institutions and public authorities that enabled those contributing to the cluster development to establish a positive dynamic that promises to sustain the clusters well beyond the end of the programme period.

Overall, stimulating the implementation of increasingly collaborative and complex projects, and more generally any type of **behavioural change**, **is a long process which may be not be observable in the short term**, but which could represent the first step in a deeper process of structural change. Some OPs acknowledged that improving the competitiveness of regional SMEs was a cumulative long-term process of successfully introducing innovation and technological development into SMEs and increasing their R&D performance. Rather than providing one-time support, in these cases **the ERDF was expected to help foster mutual commitment to ambitious investment plans tailored to SMEs' specific needs and capacity, which accompany SMEs throughout the long and ambitious journey of behavioural change**.

One relevant consequence of this is monitoring and evaluation. **Indeed, this practice requires that indicators be in place that go beyond those usually employed**, like the number of patents registered or jobs created, in much more sophisticated indicator systems (and evaluation approaches) in order to be able to grasp and account for this specific type of achievement. This is particularly important if considering that behavioural change is often not a side consequence of ERDF support, but the main and explicit goal of many policy instruments. Examples of relevant indicators would deal with trust and confidence (e.g., intention to adopt further development plans), openness (e.g., intention to open up internationally, or to link up with other firms or knowledge institutions), learning (e.g., organisational change resulting from the policy support) and preparedness.

*5.2.1.3 ERDF contribution to withstanding the crisis*

In the case of OPs for which the crisis was a major destabilising factor (Apulia, Castile and León, Lithuania and to some extent the Czech Republic), the ERDF often proved to be a useful instrument to withstand the effects of the crisis, enabling beneficiary SMEs to survive or preserve pre-crisis levels of investment and employment. **The ERDF provided a significant source of funds that helped targeted SMEs to cope with the credit crunch and supported the accumulation of fixed capital and the development of innovation activities**. It thus played a stabilising role during the financial crisis, sometimes palliating a decrease of national public support (e.g. in the Southern Italian regions).

Cases can be distinguished depending on whether the ERDF offered fresh support to firms in need of cash or whether the ERDF contributed to maintaining pre-crisis levels of investment. Although there was no definitive evidence that such support actually produced positive results in helping firms survive the crisis, the shared opinion of stakeholders and beneficiaries was that, given the circumstances, this support was very helpful in the short run.

For example, in Apulia SMEs were not only directly hit by the crisis, but they were also affected by a sudden decrease in national public support leaving the ERDF one of the few available sources of funding. Thus, the majority of guarantees supported were used to address the short term financial needs of the SMEs. In this way, the ERDF supported SMEs in need of urgent financial support by promoting short term cash rebalancing and financial restructuring. The ERDF was effective in addressing short term credit needs making it possible to access funds at low costs. Although deviating from its original and more genuine nature, the ERDF did provide very necessary support to beneficiary SMEs coping with systemic failures (the banking and credit system in particular) that could not be immediately addressed in a different way by the Managing Authority. In Lithuania, too, the ERDF made it possible to access finance which had a significant effect on business viability. Also, there was evidence that the apparent neutral effect of R&D support in fact hid the success of the ERDF in maintaining pre-crisis R&D investment levels. The same happened in the Czech Republic where the ERDF had a stabilizing role allowing SMEs to maintain their investment level (which decreased in non-supported companies). Finally, it is argued that in Castile and León the ERDF contributed more to SME survival and the safeguarding of jobs than to growth.

Aggregate evidence on beneficiaries tends to confirm the hypotheses stated above, i.e. that the ERDF was widely used in regions and countries hit by the crisis to stabilise the difficult situation experienced by some of the weakest SMEs. Although care should be taken when interpreting the figures, evidence presented in Section 5.1 shows that it was low-tech micro SMEs in manufacturing sectors that were the main beneficiaries of ERDF direct policy instruments.

**The fact that in many circumstances the ERDF served to keep SMEs afloat or preserve or restore pre-crisis levels of investment in regions/countries particularly hit by the**

**crisis illustrates the anti-cyclical role played by the ERDF**. As argued above, although this departed from the original raison d'être of the ERDF, it made sense inasmuch as there were few alternatives open to the Managing Authorities. In many cases, Managing Authorities chose to concentrate the majority of available funding from the OP on this type of intervention logic. This was the case of the Apulia OP, where the generic policy instrument described above (Title II) absorbed a large part of the OP budget to the detriment of support to R&D, for example. A similar case is Portugal, which adapted its national OP to give a more forceful response to the crisis by intensifying efforts to increase employment and strengthen private productive investments. A downscaling of original ambitions was observed in Austria too, where funding for R&D projects was shifted to support more general private investments and technology transfer.

In regions or countries that were only mildly affected by the economic crisis, the ERDF also played a stabilising role to some extent. In Saxony, for example, the ERDF contribution was shifted from the future to the present in order to allow firms to finish their R&D projects. In Denmark, by contrast, although the economic crisis affected the business confidence of Danish enterprises and hence the take-up and exploitation of the support available, the overall direction of the OP, which was focused on innovation, knowledge development and transfer, was maintained as originally planned. This strategy was highly coherent with the national and European strategies and contributed to Denmark's development as an 'innovation leader'.

#### *5.2.1.4 Wider impact on the regional economy*

When looking at the achievements of the ERDF in aggregate terms on the entire economy concerned, one may be tempted to consider that much depends on the quantitative importance of the ERDF allocation. As shown in Chapter 3, the latter was very different across programmes, ranging from a negligible share of SME support, to the principal and unique source of SME support. The case studies well reflected this diversity and offered some indication on how this may matter. Out of eight cases, four were endowed with important ERDF allocations both in absolute and relative terms: Lithuania, Czech Republic, Apulia, Poland and Saxony. It would therefore be justified to have expected macro effects at least in these cases. Indeed, even if these were not systematic, some aggregate considerations were possible.

For example, in Poland one study that assesses the macroeconomic effects of ERDF support (WYG PSDB, 2014) found that more than half of recent growth in R&D expenditure as a share of GDP[60] was driven by the Structural Funds. The results of an econometric model indicated that without the ERDF support, the share of R&D expenditure in GDP would have amounted to 0.7%, instead of the actual 0.89% in 2012. In addition, according to the same study, the recent increase in the share of high-tech (R&D-intensive) products in Polish exports was mainly driven by the ERDF funds. According to the Annual Implementation Report 2013, a total of 7,000 new jobs would have been created in SMEs by the end of 2015 as a result of the OP support.

**Even where the quantitative importance of ERDF was limited, some positive effects at macroeconomic level could be detected when funds were concentrated on selected priorities**, as the Danish case study shows. A special exercise was undertaken to establish overall Structural Fund impact on participating Danish enterprises during the period 2007-2010, using national data on enterprise performance (from accounts and tax records), rather than results reported by beneficiaries. The analysis also considered a control group made up of comparable enterprises that had not benefited from Structural Fund support. The exercise demonstrated the value added of the Structural Funds in terms of employment and turnover

[60] R&D expenditure as a share of GDP increased from 0.57% in 2008 to 0.87% in 2013.

growth at national level and in different sectors, in spite of the limited quantitative importance of ERDF in absolute terms.

Overall, however, evidence at macro level remains limited. In this respect, it is worth differentiating between the short term economic effects on business survival and employment safeguarding of policy instruments meant to counteract the impact of the crisis, and the potentially more structural effects resulting from forward-looking investment projects and significant behavioural change. The former effects may not necessarily be short lived, but they stand little chance of yielding the structural changes expected from the OP strategy. **The issue as to whether the anticyclical role of the ERDF could in one way or another impair, oppose or postpone a restructuring process by artificially keeping ailing SMEs alive is pertinent but it remains open in the context of this evaluation**.

As to structural changes, they are typically slow to take place, and depend on the interaction with a variety of other variables making it difficult to formulate strong and definitive judgement at this stage. In this respect, it is important to take into account the restricted time perspective allowed by the ex-post evaluation. The in-depth analysis of 50 OPs representing about 65% of ERDF expenditure on SMEs showed that a small proportion of the projects had actually been completed.

Yet, **the most significant change triggered by ERDF could possibly be in the form of behavioural changes in attitudes and the approaches of businesses rather than in the more immediate realisation of economic results**. Such behavioural changes, especially if they lead to incremental structural changes, are capable of eventually shifting SMEs from their initial trajectories. They set the path for a long journey of incremental behavioural changes that can eventually produce deep structural effects. As such, they are far from negligible and could be the real added value of Structural Funds intervention.

One may legitimately question the relevance of the effects in terms of overall SME economic performance and behavioural change for the economies concerned; in particular, whether they are likely to translate into more structural benefits for the entire economy, in conformity with the initial expectations of ERDF intervention.

In principle, if this effect only applies to a limited share of SMEs, little can be expected from these processes. This issue is made explicit, for example, in the case study of the Saxon OP. While the policy instruments supporting R&D showed a high degree of achievement in increasing the level of R&D and cooperation, and also employment and turnover, the impact of the induced behavioural changes on the region's economy were likely to be limited, since the number of beneficiaries was only roughly 5% of active enterprises in Saxony.

One notion identified in literature that is relevant in this respect has to do with the idea of spillover or demonstration effects. Especially if target SMEs are embedded in clusters or local production systems (ecosystems),[61] one can conjecture that the positive effects are diffused among other SMEs or enterprises that are part of these very systems. Literature tends to confirm the occurrence of such spillovers under certain conditions (in particular in terms of "institutional thickness" or social capital - see the literature review in the First Intermediate report). Firm-level evidence of such processes was found in Île-de-France and Denmark where one of the advantages of successful cluster development was that cluster management drew in other enterprises in the sector and transferred knowledge to them.

It is worth noting that the realisation of these positive effects is not necessarily the preserve of Regional Competitiveness and Employment regions, even if the chances are higher of identifying such effects in these regions because of the better preparedness and higher

[61] These are a set of enterprises and institutions linked together through various bounds and often located in a defined perimeter. There is a vast literature on clusters which is succinctly presented in the First Intermediate Report.

absorptive capacity of their SMEs. However, in Convergence regions too, it was possible to identify effects in terms of behavioural changes. For example, in the Czech Republic, the OP 'Enterprise and Innovations' was set up to contribute to an increase in competitiveness in industry and evidence collected showed that the ERDF policy instruments actually contributed to the technological advancement of SMEs. Projects were expected to trigger positive cumulative mechanisms (spread effects like finding new markets, development of new innovative products etc.) and to favour the repositioning of some companies in global production networks.

The following table provides a concise overview of the main findings related to the types of ERDF effects observed, distinguishing by level of analysis at which those findings were produced (from the more aggregate to the more specific).

**Table 4. Evidence on achievement from different levels of the analysis**

| Level of analysis | Source of evidence on achievements | Types of effects | | | |
|---|---|---|---|---|---|
| | | Economic performance | Behavioural change | Contribution to withstanding the crisis | Wider impact on regional economy |
| **Review of 50 Operational Programmes** | Monitoring indicators | - Some partial and non-conclusive evidence that policy instruments generally achieved their intended outcome, usually expressed in terms of jobs created<br>- No evidence of effectiveness in many cases due to very poor or missing information on single policy instruments or OPs | No evidence | - Specific indicators of jobs safeguarded available for few OPs<br>- Scattered evidence that reprogramming was often oriented towards improving fund absorption by SMEs | No evidence |
| **Analysis of 8 Operational Programmes** | In-depth qualitative case studies | - Evidence that some policy instruments produced positive economic effects<br>- The ERDF had a catalyser role, fostering an acceleration or anticipation of SMEs' investment; scattered evidence suggests some additionality effects<br>- Possible sustainability issues and substitution effects | - Qualitative and anecdotal information of behavioural changes<br>- Indication of the importance that the policy stimulus continues over time in order to achieve sustainable behavioural changes | - Shared opinion of interviewed stakeholders that support helped withstand the crisis in the short run<br>- Information on the different ways in which the ERDF played an anti-cyclical role | - Limited and not robust evidence at macro level<br>- Importance of spillover and demonstration effects suggested by interviews (and the literature)<br>- Indication that a longer time perspective and dedicated studies is needed: they should take into account the entire policy mix of instruments, as well as synergies with other funds |
| **Analysis of 3 policy instruments** | Detailed TBIE, surveys to beneficiaries and Bayesian Network Analysis | - More accurate understanding of how improvement in economic performance are achieved, i.e. through which changes in SME productive and organisational structure<br>- Confirmed positive economic effects particularly in terms of increase in sales, exports, profitability<br>- Confirmed catalyser role of ERDF | - Evidence of the variety of possible behavioural changes as perceived by SMEs<br>- More detailed analysis of the drivers and mechanisms of behavioural change in selected policy instruments and their link with economic performance, characteristics of enterprises, context, and other variables<br>- Stronger evidence of the importance that the policy stimulus continues over time in order to achieve sustainable behavioural changes | - The ERDF role to increase SMEs' resilience to the effects of the economic crisis was confirmed by the majority of surveyed SMEs<br>- More insights of how the crisis led to a downscaling of original ambitious of Managing Authorities, e.g. through changes in eligibility and selection criteria | No evidence |

Souce: CSIL.

#### 5.2.2 Conditions of effectiveness

*5.2.2.1 Selectivity in terms of objectives and SMEs targeted*

**The typical policy instrument yielding positive results in terms of SME competitiveness and/or behavioural change was selective in terms of beneficiary SMEs and objectives targeted**, and was carefully designed to be adapted to SMEs needs. This category can usually be contrasted with generic support instruments such as those employed to mitigate the effects of the crisis in the short term. Thus, more than the growth/innovation dichotomy, the distinction between generic and selective instruments appeared to be significant in discriminating between policy instruments in order to account for performance, and possibly for wider regional effects.

Together with the identification and targeting of the beneficiary SMEs for whom the desired change was expected to materialise, clarity about the objectives of the policy instruments, and the desired change that the latter were expected to trigger was the other ingredient that was decisive in order to achieve greater selectivity. In general, objectives were related to the general theory of change underlying the OP, and at the same time specific in terms of the changes that were expected to take place within the beneficiary SMEs: they contributed in this way to the selective nature of the considered policy instrument. Examples were the instruments supporting internationalisation in Castile and León, or those promoting R&D in Lithuania. A common finding of the theory-based impact evaluation of the three selected policy instruments, all of them targeting rather generically defined SMEs and objectives, was the possibility of identifying homogenous groups of beneficiaries that performed much better than others, which indicated that a more refined targeting strategy would have been associated with higher effectiveness.

These two conditions are inseparable: it was the definition of objectives in relation to targets that rendered a policy instrument more focused and gave it a better chance of achieving the expected result in terms of behavioural changes, i.e. changes that stood a higher chance of yielding structural and sustainable effects. Whereas it was common to assess the selectivity of an instrument in terms of target, the theory-based impact evaluation showed that it also concerned the type of investment or activity supported. For instance, in spite of the variety of actions adopted by the enterprises that were eligible for the Title II contribution in Apulia, only a subset of them (those that encouraged enterprises to widen the range of products and improve productivity) enabled direct and positive economic effects to be obtained.

Importantly, **selectivity** thus defined **does not necessarily imply a small scale of operation**, although of course, it is easier to achieve selectivity on a smaller scale. Concentrating funding on selective instruments is inevitably more difficult for OPs endowed with a large allocation of ERDF in Convergence regions where there is a considerable pressure on spending. However, evidence collected show that this was possible and it was not the preserve of Regional Competitiveness and Employment regions. For instance, both the Polish 'Innovative Economy' OP and the Czech 'Enterprise and Innovations' OP committed around 30% of funds to one single policy instrument, in both cases targeting support for new investment in enterprises with a high innovation potential.

If policy instruments that were "selective" according to the definition above were often instruments pursuing objectives in terms of innovation, they were also sometimes classified as growth-oriented, since they acknowledged innovation as a driver of SME development. This was the case of the integrated facility package implemented in the Apulia region and the Castile and León initiative pursuing internationalisation.

One issue was how to reach and select the targeted beneficiary SMEs. It was seen in Section 4.5 that generally there were few explicit criteria set out in terms of sectors or size. In fact, it

turned out that funds were nevertheless channelled and to some extent concentrated on specific types of beneficiary, usually the most innovative and fittest ones, i.e. those with the highest absorptive capacity as described above. Thus, **a process of self-selection or "soft targeting" took place whereby the most capable and fittest SMEs were *de facto* targeted**.

There were different reasons why this happened. Soft targeting can take place through the very *design* of a given policy instrument: for example, in the case of grants combined with loans, it was bankable SMEs that were automatically involved, or as a result of the definition of the objective when this was specific and well formulated (see below). Also, it was possibly the fittest SMEs that were able to take advantage of ERDF funds inasmuch as they had the financial capacity to cope with the delays associated with ERDF rules of disbursement, and the managerial capacity to deal with the administrative burden associated with some policy instruments (signalled in Castile and León, Apulia, Île-de-France, Lithuania, Poland and Denmark). More generally, as argued above, ERDF support more easily reached SMEs that were already aware of the changes needed and of the available options in terms of public support available. In some cases, SMEs targeted through such a process of soft targeting were embedded within proper ecosystems. This was well illustrated by the Denmark and Île-de-France OPs which centred their strategy on clusters (defined by regional growth forums and competitiveness clusters, respectively).

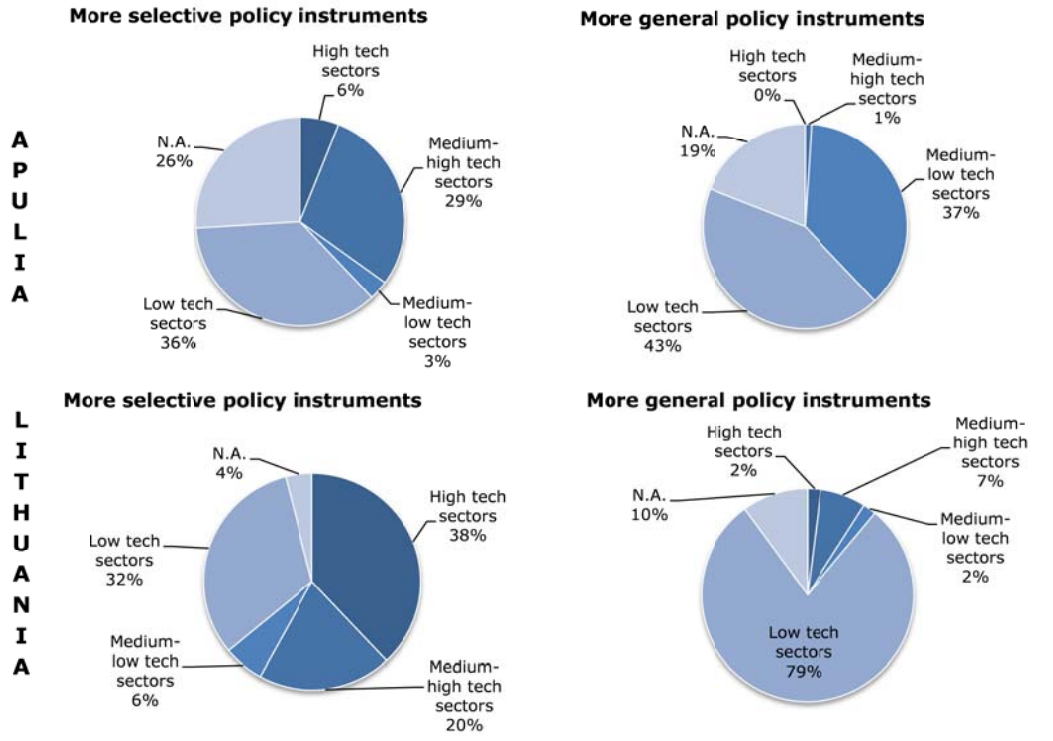
In an industrial fabric dominated by SMEs with the ability to innovate and grow, the design of selective instruments is perhaps less of an imperative, because the more capable SMEs will make the best use of policy instruments anyway. In contrast, for SMEs in low-tech sectors, for example, which lack these capabilities, selective instruments encouraging (courageous) strategic choices are more important. This could be coined as a new "innovation paradox": **selective instruments were both more decisive and more difficult to implement in Convergence regions where ERDF allocations were more important**. One way to escape from being trapped in this paradox is for intermediaries to take up the challenge and help design and implement relevant policy instruments. As illustrated below (Section 5.2.2.5), capable intermediaries are not the preserve of Regional Competitiveness and Employment regions.

**By contrast, the type of policy instruments mobilised to withstand the crisis was *generic***. They aimed to reach the widest possible number of beneficiaries, without much specification of the target beneficiaries or the specific objective the policy was expected to achieve. As documented in Chapter 4, a shift of resources occurred in favour of such generic policy instruments at the expense of more selective or innovative instruments.

In general, these policy instruments pursued objectives in terms of growth, rather than innovation (see Chapter 4). Their modes of delivery, however, differed. They were traditional grants, but some financial instruments were also implemented within this logic, the typical examples being financial instruments in Lithuania, or credit guarantees in the Italian and some French regions. Another interesting example is offered by the financial instrument proposed in the OP of Hainault (Belgium) and targeted to micro enterprises, which consisted of a combination of micro-loans (lower than EUR 38,000), provided in a simple way and with minimal bureaucratic requirements, with direct guarantees to the banks that provided the credit.

The case studies confirmed that beneficiary SMEs of generic policy instruments were less high-tech in Apulia and Lithuania than those of more selective instruments targeting innovation goals (see figure below).

**Figure 34. Type of beneficiary SMEs targeted by different types of policy instruments in Apulia and Lithuania**




Source: CSIL.

*5.2.2.2 Critical size at project level*

**The critical size of funding at project level was important to maximise the chance of triggering the effects expected from ERDF in terms of SME competitiveness and behavioural changes**. It can be estimated that the average volume of ERDF funds (directly) allocated to each SME was approximately 115,000.[62] It ranged from few thousands euro (e.g. for instruments aimed to address short-term credit needs) to some millions (e.g. in case of instruments co-funding the purchase of high-tech production machineries or the implementation of R&D projects). Considering that the number of SMEs benefitting from ERDF usually represents a tiny share of the total enterprise population of the region (2% on average), the project's size can be crucial in attaining positive effects at an enterprise level, which may also eventually translate into wider regional effects.

For example, in the case of the integrated facility package in Apulia, it was the very quantitative importance of the grant that made a difference and enabled SMEs to envisage ambitious and complex investment plans. Also in the Île-de-France case, it was found that a critical size of projects (and in some cases the absence of it) was the main determinant of success (or failure) of the two instruments promoting R&D projects. Evidence from the in-depth evaluation of the three policy instruments confirmed that the volume of the ERDF

[62] This estimate refers to instruments providing direct support to SMEs or a combination of direct and indirect support. It considers that the ERDF support to SMEs amounted to around EUR 47 billion and that 246,000 beneficiary SMEs have been counted for about 60% of policy instruments identified in the 50 OPs.

support received by beneficiary SMEs was positively and significantly correlated with SMEs' performance in terms of sales (particularly in Poland) and employment (in Apulia).[63]

A critical size at project level was possible in the case of policy instruments that took advantage of significant allocations and a "narrow" number of beneficiaries, at least compared to the total SME population. An example of this is the already mentioned 'Technological Credit' in Poland to which more than EUR 430 million was allocated to support large investment projects carried out by fewer than 600 SMEs, each one worth on average more than EUR 1 million. These investments allowed SMEs to replace their fixed tangible assets with more modern ones capable of bringing significant modifications to existing production processes and, hence, the production (and export) of new or improved products.

By contrast, **generic instruments were characterised by low critical size at project level**. Their budget allocation was significant - which was useful to enable funds subject to de-commitment to be spent rapidly in regions/countries characterised by difficulties related to fund absorption. However, despite the important budget, the size of the projects funded was small, given the high number of beneficiary SMEs. An emblematic example is the Apulian Title II instrument. Launched in 2009 and open until June 2014 with a one-stop-shop approach, Title II funded generic types of expenses associated with business modernisation, such as renovation work or the purchase of new equipment, including furniture for commercial or administrative use. It supported almost 4,000 firms, more than 80% of which were individual entrepreneurs or micro enterprises that carried out investment projects worth between EUR 30,000 and EUR 130,000. The difference between this instrument and the Polish 'Technological Credit' previously mentioned revealed the fundamentally different objective of the two policy instruments: to stimulate structural change in the Polish case and to provide generic working capital to counteract the effects of the crisis in Apulia. Achieving critical size of funding was therefore not an essential ingredient for generic policy instruments, if their goal was to address short term credit needs and accelerate fund absorption.

**There were also cases when the support granted was low in quantitative terms, but highly efficient**. Cases of such cost-effectiveness were related to indirect support, or more likely, support **in the form of advice or technical support**. In Castile and León, for example, final beneficiaries appreciated the high value-for-money of some schemes managed by the Council of Chambers of Commerce and characterised by relatively low support intensity per final recipient. These were instruments promoting internationalisation and the use of ICT in SMEs by means of consulting activities, advice, information campaigns and other events. In Île-de-France the so-called collective actions, involving consulting services on a variety of themes, were effective at targeting very specific needs of selected SMEs belonging to Competitiveness clusters. The impact of these interventions, often combined with other direct support measures, is not straightforward, but some contribution to behavioural changes can at least be expected from them.

The intensity of public aid is a different issue. The in-depth analysis of three selected policy instruments showed that **the ratio of support to the volume of the investment was not usually a significant variable in explaining the firms' performance or behavioural change**. Yet, aid intensity may be more relevant in explaining the decision to start the investment project. Higher aid intensity made the instrument more attractive to enterprises that were reluctant to undertake new investment, as shown by the Apulian Title II instrument: the maximum aid intensity increased over the years along with the popularity of the instrument. This subject opens the way to another set of conditions of effectiveness, which has to do with the way that the policy instruments are put in practice, as discussed in the next section.

[63] For the Spanish case, the economic performance of SMEs positively depends on the volume of grants for R&D projects or the number of projects implemented, but these variables are not statistically significant.

*5.2.2.3 Conditions of implementation*

There were several additional elements that helped enhance the effectiveness of selective policy instruments as defined above. These were related to the way in which policy instruments were implemented so as to respond as specifically as possible to the needs of the targeted SMEs.

It was observed that the **degree of risk of projects was increasingly taken into account when devising the most appropriate form of support**. For example, there was some concern about modulating the aid intensity of support according to the risk: the higher the risk of some projects components, the higher the aid intensity as illustrated by examples in Lithuania and Apulia. Also, the differentiated degree of risk associated with projects was one important feature taken into consideration when choosing the appropriate mode of delivery. In this respect, grants are increasingly considered not to be the privileged or unique mode of delivery. In some countries, such as Denmark and Sweden, grants to individual enterprises were already excluded as a principle, though this remains the exception rather than the rule.

As noted in Section 4.5, a shift from non-repayable to repayable aid was observed throughout the case studies. There was a growing understanding that grants were especially useful to support risky projects but that they represented an inefficient use of resources for simpler projects: repayable aid under the form of simple loans was indeed more suitable for less risky projects and offered the advantage of being more business-friendly. This was documented in Lithuania, where loans carried a much easier administrative load than grants. This was corroborated by findings from the ex-post evaluation WP3, according to which financial instruments and grants were pragmatically used in a complementary way and in consideration of the level of risk of the project, even if this was not well articulated at strategic level.

With specific reference to R&D and innovation projects, evidence from the OPs analysed and from literature show that in the earlier stages of R&D, market failure in the form of asymmetric information and high risks, justified the recourse to grant schemes and higher aid intensity. However, in the phases of developing and commercialising new products, loans could replace or at least combine with grants.

One example of combination of grant and loan is the Polish 'Technological Credit' measure. In line with the European Commission's Recommendations for a better use of EU funds (European Commission, 2012a; European Parliament and Council, 2013) the policy instrument, consisting of a combination of ERDF grants with commercial bank loans, responded to the need to create awareness and experience in the use of financial instruments, which are supposed to increasingly replace traditional grant support during the 2014-2020 programming period. Also, in Île-de-France an ERDF grant complementing a repayable contribution supporting R&D projects was used to increase the attractiveness of the latter, even if, in the end, it was judged to be an insufficient incentive given its limited budget envelope.

**The level of project risk is generally associated with the maturity of the SME as an innovator**. In Lithuania mature innovators were ready for larger and long-term innovation projects combining various funding sources, while potential innovators would have benefitted from soft innovation support and smaller experimentation processes developed over time (the "competence stairway").

In these examples, grants were not necessarily crowding out loans, particularly those challenged by the increasing non-interest rate costs of financing and collateral requirements recorded in a period of general shortage in the credit market. Overall, as illustrated in Section 4.5, grants remained the most diffuse form of support for SMEs.

The concern for risk as a criterion for determining the choice between loans and grants as the best mode of delivery does not apply as far as new technology-based firms or "gazelles" with

high potential for growth and innovation are concerned. In this case, risks as well as potential rewards are both very high and a financial instrument under the form of venture capital is opted for (examples are in Île-de-France and Saxony).

**The combination of policy instruments making possible the strategic/*sui generis* use of policy instruments was another way to adapt support to SMEs' specific needs**. Hence, the prevalence of grants identified in the analysis of 50 OPs concealed more sophisticated patterns. There were examples of simultaneous combinations of policy instruments and others when policy instruments were deployed over time to accompany SMEs in their different development stages.

As illustrations of the former case, hybrid instruments took the form of a combination of grants and loans, grants and interest subsidy, grants and technical assistance, etc. Repayable and non-repayable aid were also sometimes combined in order to familiarise SMEs with the former (e.g. the Polish instrument mentioned above). In Poland almost two third of instruments were actually delivered under a combined form. In Saxony there were some indications that SMEs made a cumulative use of policy instruments. Service packages and indirect support (advisory services) are privileged in Denmark, Île-de-France in connection with the activity of clusters, and in Castile and León where they are delivered by Chambers of Commerce.

Evidence from case studies showed that such combined forms of support were more effective. This was because different policy instruments contributed to tackling different facets of SME growth and innovation activities and provide a critical mass effect. Alternatively, the combination of policy instruments over time may prove to be particularly suited to nurturing and consolidating gradual processes of change that a single policy intervention cannot secure. For example, in Lithuania grants for business development and productivity were shown to be most effective when combined.[64] Also, there was evidence in the Czech Republic that many SMEs became beneficiaries under different policy instruments, hence spontaneously availing themselves of the multiplied benefits offered by a combination of policy support and "accumulating and multiplying the potential effects of the entire programme". Similarly, the combination of support operated by Chambers of Commerce in Castile and León was identified as a factor increasing the effectiveness of the policy instruments concerned.

In all these cases, although a concentration of support instruments for the same target SMEs or priority was seen as a solution to creating a critical mass and supporting SME development patterns and behavioural changes, the risk was of encouraging an (over) dependence on public funds.

**Synergies with other national and European funds, particularly the ESF, can be exploited to maximise the intended objectives**. Synergies between the ERDF and the ESF were always envisaged at a programme level, at least on paper, but only on a few occasions have synergies also been pursued at the level of single policy instruments, through the cross-financing of the same investment projects. This is the case with the instrument of the Steiermark OP that supports innovation-oriented investment projects and the complementary training of employees; or the instrument supporting incubators in Île-de-France, where support for incubated projects was combined with support for human capital and training. In Denmark there were deliberate synergies between the ERDF and ESF instruments, too, in order to ensure their complementarity and maximise impacts. The implementation of the two programmes was closely coordinated so that the same project could not receive funding from both funds, but projects could be jointly planned in order to supplement each other.[65]

[64] In particular, the highest effect is achieved when the support form technology upgrade and upgrade of processes (managerial innovation) are combined.

[65] Within the ERDF projects up to 10% of expenditure can be granted to activities which would typically belong under the ESF and vice versa.

#### 5.2.2.4 *Coaching and accompanying measures*

Specific measures or arrangements to accompany the implementation of a policy instrument can contribute to the effectiveness of the latter. In particular, **the quality and intensity of the interaction and dialogue between implementing authorities and beneficiary SMEs were identified as important factors strengthening the pertinence of policy instruments in tackling and responding to SMEs needs**. The value of face-to-face interaction and dialogue between policymakers and SMEs along the different phases of the project cycle (from project selection to implementation), which centred on a clear and mutual commitment to delivering successful projects, was reiterated on numerous occasions throughout the case studies. It was also illustrated by the results of the theory-based impact evaluation of the Castile and León instrument for R&D, where the regional development agency ADE took a proactive role in order to ensure its effective implementation. This involved establishing a dialogue with applicant enterprises in order to understand their motivation for the project and agree on the best way to achieve the research objectives. When applications for similar project ideas were received by different enterprises, ADE explored the scope for collaboration as a way of achieving the research objectives in a more effective and efficient manner.

The implementation practices put in place in Apulia for policy instruments addressing research and innovation provided another good example of a model of long-term accompanying process. For example, public presentations of the planned instruments were systematically carried out as long as four months before the call was launched. Such consultations were pro-actively directed towards a system of co-design, according to a model that was said to have evolved from a 'consultation for listening' to a 'consultation for co-designing'. In this way the call specifications were fine-tuned and tailored to the specific needs and capacity expressed by potential beneficiaries, without however hampering the original aim. Living Labs were said to be the essence of what was learned during the implementation period, combining aspects of both prioritising a small number of thematic areas and an implementation system based on a step-wise process, wide consultation and a focus on users' needs and social innovation.

The possibility of accessing a one-stop-shop was also underlined on many occasions throughout the case studies as a way of reducing the administrative costs associated with an application for public funds. While a competitive selection process was usually the best way to select projects based on their quality and technical features, the one-stop-shop approach was nevertheless suitable to implement more generic and simple projects and to make the access to funds for SMEs easier.

Beyond the mode of interaction between project holders and implementing bodies, **complementary measures were also taken with a view to strengthening SMEs' absorptive capacity**. In Castile and León financial support was considered insufficient if it was delivered in isolation. Hence an important "line of action" was entirely dedicated to capacity building. In Lithuania, service and mentoring measures accompanying financial instruments were considered to be appropriate. Thus, the stress was placed on human resources, training and skills, fields in which the ESF can play an important complementary role.

Good practices to strengthen SME capacity included the use of external experts with scientific and technological skills for project selection, direct interviews with entrepreneurs and field visits to assess the willingness and realism of investment plans, the provision of scientific support for project design and development in order to strengthen the scientific quality, technological audits complementing administrative and financial assessments, commitments to employment or innovation results (Apulia, Saxony, Castile and León).

Overall, information, tailor-made personal support, inexpensive access to expert advice, access to specific knowledge, face-to-face support and one-stop entry points were various elements that could make a difference in enhancing the effectiveness of policy instruments.

#### *5.2.2.5 The role of intermediaries*

Evidence from the case studies and the theory-based impact evaluation of policy instruments showed that intermediaries were often at the centre of the different conditions of effectiveness described above. As shown in Section 4.6, in the 50 OPs reviewed, 37% of policy instruments entailed recourse to intermediaries, usually to provide access to equity finance, repayable financial support and consulting services. Beyond this quantitative evidence, the analysis provided useful qualitative indications on the way in which intermediaries contributed to the effectiveness of the policy instruments concerned.

Intermediaries spanned institutional boundaries and reflected institutional differences (as introduced in the literature review included in the First Intermediate Report). Examples of intermediaries at the centre of ecosystems mentioned above are the regional growth forums and 'Growth Houses' in the Danish OP or the competitiveness clusters in Île-de-France. Other more common examples of intermediaries are Chambers of Commerce in Spain, private financial institutions in charge of financial instruments or technology transfer offices or interface structures in Castile and León and Lithuania, a public regional development bank in Île-de-France (Bpifrance), etc. Implementing bodies, as per the regulation's definition, also played an important role in some OPs, for example a public bank (SAB) in Saxony, CzechInvest in the Czech OP 'Enterprise and Innovation', or InnovaPuglia in Apulia.

In general, the case studies found evidence that the **role of intermediaries was often decisive in accelerating fund absorption, in decreasing the time and costs (administrative costs in particular) to access funds and in accompanying beneficiary SMEs in developing and implementing their investment strategies**. Fundamentally, they had the necessary local knowledge of both the specificity of SMEs and of the socio-economic and institutional context in which the latter operated, which gave them strong advantages when devising and/or implementing policy instruments designed to tackle the most pressing needs of SMEs. It was also sometimes argued that intermediaries were useful in helping SMEs to deal with the administrative burden associated with the Structural Funds (e.g. in Île-de-France this was one reason for the preference for indirect measures managed by intermediaries). Furthermore, intermediaries are in a position to argue the need to adjust and fine-tune the policy instruments during the course of the programming period, thus ensuring a prompt response to emerging challenges or changed priorities.

In fact, the contribution of intermediaries can vary according to the type of intermediate body concerned, and the stage(s) in the policy cycle to which they contribute: from strategic definition and programming, to selection of beneficiaries, implementation, monitoring and evaluation. For example, regional development agencies are in a privileged position to select and screen projects in substantial terms, checking their real contribution to the objectives of the strategy, and going beyond the automatic or formalistic compliance sometimes criticised in the case studies (e.g. in Apulia and Poland). Other intermediaries like interface structures or commercial banks can also have a more technical role assessing the scientific quality of projects, or their managerial value (and bankability), but they have a necessarily more narrow view concerning the appropriateness of the project with respect to the overall strategic objectives. Yet other intermediaries like, for example, cluster managers (in Denmark or Île-de-France) or Chambers of Commerce in Spain are ideally placed to combine instruments in the most effective way that is adapted to the needs of a specific set of SMEs (their members). Also, one of their key advantages is their capacity to engage in a close and direct dialogue with

beneficiaries, as described above. This dialogue can be scientific and very specialised and technical if need be or more general and business-oriented.

Beyond institutional definitions, **much depended in fact on the capacity of these intermediaries**, which is only partly determined by their function. For example a holding fund in Île-de-France was found to include a rather comprehensive assessment of the projects supported in technical terms. Conversely, a public development bank (Bpifrance) with an excellent knowledge of the regional context and SME fabric proved to be insufficiently prepared to deal with ERDF procedures and/or to palliate the deficiencies of ill-designed policy instruments.

The capability of intermediaries is fundamental inasmuch as Managing Authorities inevitably lose their grip of the implementation process when competence and responsibility are delegated to such intermediaries. In particular, an adequate information system turned out to be crucial to ensure that knowledge of the relative performance of the policy instruments was duly reported and shared (in contrast, in Île-de-France little information or data on the so-called "collective actions" was centralised and reported to the Managing Authority).

Also, it is imperative that such intermediaries align themselves with a clear and shared regional strategy rather than acting as service providers for their own 'clients'. This alignment of objectives is crucial to discriminate ex-ante between opportunistic (i.e. simply capturing rents) and entrepreneurial interest and to minimise the risk of SMEs' over dependence on public funds. Clearly, a "client-oriented" approach would imperil the selectivity of the strategy to which an intermediary is expected to contribute.

The appropriate selection, involvement and empowerment of such intermediaries in the programme design can be decisive. Clearly not all intermediaries are in a position to endorse all these roles effectively, and there are conditions for this. In particular, this depends on the type of policy instrument since **there must be a strong fit between the type of instrument and the type of intermediary**. For example, a financial institution will typically consider banking criteria rather than the technical aspects of a project (see the role of banks in the two Italian and Polish instruments assessed under the theory-based impact evaluations).

# 6 CONCLUSIONS AND POLICY IMPLICATIONS

## *6.1 Conclusions*

This chapter presents the main conclusions of the study grouped under the key evaluation criteria of relevance and external coherence, effectiveness, efficiency, sustainability and added value.

### 1.1.1 Relevance and external coherence

In line with the realist approach chosen to underpin this study, one lesson from the findings detailed above involves the role of the context in which SMEs operate in shaping strategies and determining outcomes. **Context is one of the first fundamental elements that should be taken into account when devising policy strategies**. However, it was also found that there is no automatic way of defining the relationship between context and outcome. The following criteria contributed to defining specific situations:

- volume of ERDF dedicated to SME support;
- proportion of ERDF dedicated to SME support out of total ERDF funding;
- relative importance of national/regional co-funding compared to ERDF;
- relative importance of total ERDF and national/regional co-funding with respect to overall public funding addressing SMEs, and of the mode of interaction with the measures in place or the policy mix (complementing or supplementing existing measures);
- SME heterogeneity: structural characteristics of the SME fabric (including geographical distribution of SMEs);
- variations in the nature and degree of impact of the recession on the SME fabric;
- differences in the level of maturity of the (regional) innovation systems.

As shown in Chapter 2, these criteria were not necessarily aligned. For example, while the development stage of the regional economy and the degree of maturity of the existing regional innovation system were certainly important variables influencing the success of an SME strategy, they did not necessarily correspond to the distinction between less and more developed regions (i.e. Convergence and Competitiveness regions). In turn, the latter were not entirely aligned with the difference between regions (countries) where the ERDF represented the bulk of available public support to SMEs and those where it carried only marginal weight, where the crisis hit hardest, and where there was more resilience, etc.

One would expect the ERDF to play different roles in such different contexts and that this would be reflected in the design of the strategies. However, **in contrast to this multifaceted and multiform background, OPs adopted relatively homogeneous theories of change by referring to the generic objectives set out in the Lisbon strategy in terms of innovation and competitiveness**. At this level of analysis, the broad strategic choices made did not do much justice to the complex and differentiated contextual background in which they were to apply. Diagnostics tended to indistinctively refer to issues such as insufficient science-industry cooperation, lack of SME critical size, the necessity to move specialisation into higher value added sectors and so on. An explicit justification of the role that the ERDF is realistically called on to play in the target region is generally missing.

In particular, the distinction between growth-oriented strategies addressing the lower end/low tech SMEs and an innovation focus targeting the more competitive and higher tech SMEs was, in many cases, blurred, with dual strategies trying to accommodate both objectives. Possible

trade-offs, for example between fostering innovation among the most promising firms and territorial cohesion, in most of the cases remained unexplained.

Notwithstanding the relative indeterminacy of the theories of change underlying OPs, there was an impressive variety of objectives and implementation features at the policy instrument level. A considerable number of policy instruments were mobilised to tackle what were perceived to be specific market failures ranging from a reduction in investment costs to improved access to credit. Hence, a **large number of measures were proposed among which beneficiary SMEs or project leaders were expected to choose via a demand-driven approach**. In many cases, this was ascribable to a logic aimed to fund production factors in which emphasis was placed on capital investment, technology adoption or simple access to liquidity, rather than on the expected results.

**This setting actually proved to be particularly appropriate when faced with the unprecedented recession** that unfolded just a few years after the beginning of the programming period and that hit some of the regions eligible for ERDF support particularly hard. The areas concerned were mainly, but not exclusively, Convergence regions (in the sample of case studies: Castile and León, Apulia, Lithuania and to some extent the Czech Republic, too). Thus, reprogramming usually consisted of reinforcing the most generic policy instruments at the expense of more experimental and selective ones.

That said, in some cases more selective instruments were also mobilised. They were specifically tailored to the needs of certain types of SME, in general the most capable ones enjoying a fair level of absorptive capacity. This was possible not just in regions only marginally affected by the crisis, but also in those severely hit by it, such as Lithuania or Apulia. Interestingly, these policy instruments were adapted to suit SME needs by, for example, using them in combination. Thus, when traditional policy instruments like grants were combined or structured in a strategic way, they turned out to offer quite innovative and appropriate solutions, whereas some supposedly more "evolved" ones like financial instruments were actually less sophisticated and largely contributed to a logic funding production factors described above.

As to *external coherence*, evidence showed that much depended on whether the ERDF was the main (or unique) source of SME support, or whether it coexisted with national/regional arrangements and how much national co-funding it generated. When the ERDF was used alongside existing measures (more often in Competitive and Employment regions), two main ways of combining it with the domestic policy mix were found: either the ERDF complemented existing measures, or it filled gaps in the support system. This, *per se*, was not a determinant of the effectiveness of ERDF support.

Synergies with other EU funds and instruments varied case by case but were generally low, especially as far as the ESF was concerned. The possibilities ranged from no combination whatsoever, to complementarity at project level, and to synergy at programming level. The lack of systematic and comprehensive synergy between ESF and ERDF was particularly striking when considering that the global crisis emphasised that measures safeguarding employment should be given priority over those fostering research and innovation. Given the circumstances a more strategic approach to creating synergies between ESF and ERDF would have been expected.

No evidence of complementarity with the RTD Framework Programme was found apart from the fact that SMEs accustomed to public support tended to screen various options trying to access and combine the two sources of funding. Cases of substitution were also identified with a preferred recourse to ERDF, which was considered to be less demanding and exclusive than the Framework Programme when it came to financing R&D projects.

**The new programming period 2014-2020 offers potential to better ensure strategic coherence**. For example, it expects more strategic focus through enhanced dialogue between the European Commission and national and regional authorities around the elaboration of Partnership Agreements. In this context, the emphasis is placed on sound intervention logic fixing clear objectives. Also, the Strategic Common Framework is expected to facilitate the programming process setting by providing guiding principles on how best to combine the European Structural and Investment (ESI) Funds.

#### 1.1.2 Effectiveness and sustainability

The evidence available from the monitoring system was disappointing overall in terms of its nature and quality and it did not provide a solid information base on which to build a valid assessment. The fact that monitoring systems were often focused on output indicators was inevitable, but there were issues concerning the quality and the pertinence of these very indicators. In some cases, indicators were provided at an aggregated level (programme or axis/priority level), while indicators at policy instrument level were often missing or were not systematically collected. In addition, the case studies showed that there was a lack of systematic before/after reporting, with the ex-ante expectations of beneficiaries wrongly reported as output indicators. In many cases, there was also an issue about the lack of specific evaluation studies carried out in the field by the Managing Authorities (see below).

Combined evidence from the case studies of the programmes, in-depth theory-based impact evaluations of policy instruments and aggregate analysis of OPs showed the **positive effects of the ERDF in consolidating the competitive position and improving the economic performance** (in terms of increase in sales, exports and profitability) of a proportion of the beneficiary SMEs. This was done by supporting productive investments, some of which were of an innovative nature. The implementation of these investments brought about various changes in SMEs' productive and organisational structures in terms of improvements in the production processes or work organisation, introduction of new products/services aimed at the market, increases in fixed capital (e.g. through the purchase of new machinery or construction of new production facilities) and the employment of new (and perhaps more skilled) workers. However, these results raised issues in terms of additionality and sustainability and little evidence was available about whether the ERDF triggered positive effects that would not have materialised without it. In fact, it is more probable that it played a catalysing and accelerating role, which in any case was a positive result given the particularly negative macro-economic conditions.

Generally speaking, these effects benefitted SMEs that already had the capacity to grow and innovate. **They were triggered by selective policy instruments**, which represented a minor share of beneficiary SMEs and of implemented instruments. For these reasons, this type of effect had a limited reach overall.

**The role of the ERDF was more extensive in helping SMEs to withstand the crisis** in the most affected regions by keeping them afloat or by helping to maintain pre-crisis levels of investment. Generic policy instruments (in the form of traditional grants, but also financial instruments) targeting the highest possible number of SMEs were mobilised to provide access to credit and deal with the credit crunch – while complying with conditions in terms of fund absorption at programme level.

However, little evidence of a deeper restructuring process, with a shift of the economy towards higher value added segments, as expected in many OPs, could be found. One could say this was an unsurprising result given the overall relatively modest levels of ERDF engaged in absolute terms, or given the timing of the evaluation exercise. In fact, not only did this not hold true for a number of regions where the ERDF was actually the main source of funding for industrial policy, but it also concealed **a more fundamental feature characterising the**

**way in which the ERDF is effective, i.e. by triggering cumulative behavioural changes capable of shifting SMEs from their trajectories**. The types of behavioural change elicited by some ERDF instruments ranged from the intention to change internal organisational features (e.g. value attached to having more skilled employees, increased capacity to deal with complex R&D projects, willingness to enter new markets or look for alternative suppliers), to changes in strategy (e.g. applying for other forms of support, starting other investment projects in the future, broadening one's outlook by envisaging options over the border), and to wider changes in mindset (e.g. a more open attitude towards innovation and business R&D, learning to cooperate). This was no less decisive than the immediate effects in economic terms (impact on competitiveness or employment, for example). It was, in fact, more in line with the ambitious goal of engaging in a wider process of promoting innovation and growth. In addition, these effects were more relevant for less competitive SMEs, which usually showed a lack of entrepreneurial spirit and a strong resistance to change. However, while the more traditional SMEs were usually less ready to make behavioural changes, they were also those for which a change could be expected to bring the highest returns and greatest improvement in competitiveness.

It is worth noting that the realisation of these positive effects was not necessarily the preserve of Regional Competitiveness and Employment regions, even if the chances of identifying such effects were greater in these regions because of the better preparedness and higher absorptive capacity of SMEs. However, in Convergence regions too, it was possible to implement selective instruments and harvest the corresponding benefits, even if statistical evidence of the macro impact was still hard to find.

The identification of the long term impact of the contribution of the ERDF to the mitigation of the effects of the crisis – its "anti-cyclical" role (whether it could hinder or postpone a necessary restructuring process, for example) would require a specific methodology (counterfactual analysis) and a longer time span. It, therefore, remains an open question in the context of this evaluation. However, if indeed the ERDF was instrumental in fostering behavioural change, this was particularly valuable in terms of *sustainability* since this is the first important step towards developing more structural changes.

#### 1.1.3 Efficiency

The large number of policy instruments identified (670 in total, i.e. an average of 13 per OP) reflected the intention of Managing Authorities to comprehensively address different market failures, but it could also result in a dispersion of funds with negative impacts in terms of efficiency. **Regardless of the number of policy instruments, what mattered was the capacity of Managing Authorities to concentrate resources** on the most effective policy instruments, i.e. selective instruments. For example, in Poland, although many different policy instruments (26) were mobilised by the national OP 'Innovative Economy', almost 40% of the funds were concentrated on three of them, devoted to the development of technological and non-technological innovation.

At the level of policy instruments, it was argued that conditions of efficiency were not clearly fulfilled in the (more frequent) cases of generic policy instruments reaching a high number of beneficiary SMEs, especially if they were characterised by a small critical size at project level. On the other hand, generic instruments had the advantage of allowing Managing Authorities to spend large quantities of funds quickly and easily in contexts where fund absorption was an issue (in Convergence regions).

By contrast, **each euro of ERDF dedicated to support selective instruments was spent more efficiently than that dedicated to generic instruments, inasmuch as it mobilised deeper changes more likely to yield durable structural changes**. This was especially the

case when these instruments reached more capable SMEs embedded in ecosystems yielding spill-over and demonstration effects, i.e. in more advanced innovation systems.

It was also documented that under certain conditions, ERDF interventions could be very cost-effective. For example, the use of indirect support in the form of tailored business advice targeted to a specific set of beneficiary SMEs embedded in a well-functioning ecosystem required only a small budget, but brought about long-lasting effects in terms of behavioural change and eventually restructuring. Instead, in less developed innovation systems and/or when SMEs had lower absorptive capacity, the critical size of the support at project level was more important to trigger the desired behavioural change.

True, the mobilisation of more selective instruments entailed selection processes that went beyond checking administrative and financial requirements and made use of an in-depth assessment of the technical and scientific quality of the proposals (for example, by involving external advisory staff with high level expertise, as reported in some case studies). This might have been particularly cumbersome for implementing bodies, which needed to be given the proper incentive and resources to steer such processes.

Hence, the paradox (noted elsewhere in literature as the "Innovation paradox") between cases where large ERDF budgets were available in contexts where there was less capability to spend them efficiently and cases where small ERDF amounts were most efficiently spent through the use of selective instruments.

Overall, there was a trade-off between ensuring that large amounts of funds were efficiently (i.e. easily and quickly) disbursed to a large number of beneficiaries and a strategy of cherry picking the most promising ventures by ensuring that close scrutiny of the technical, entrepreneurial and developmental spill-over characteristics (for example in terms of employment creation or technological spill-overs on suppliers in the region) was duly reflected in the selection process.

In this context, **the role of intermediaries was crucial** in order to maximise the number of beneficiaries reached and to make the entire process smoother. As discussed earlier, however, the screening performed by a fund manager or financial intermediary could only partially fulfil the needs of selecting the most promising firms or investment projects in terms of a contribution to development goals, focusing only on bankability and financial robustness criteria. Additional criteria needed to be fulfilled, concerning the nature of the intermediaries and not least their ability to contribute to enhancing the overall efficiency and effectiveness of ERDF support.

Finally, opinions collected in the field from SMEs and their representatives included complaints about the high administrative costs in accessing EU funds, which raises concerns in terms of the overall efficiency of the delivery system. As discussed, this was partly mitigated by the role played by intermediaries and local consultants specialising in EU projects. The new programming period has tackled this issue more upfront with the adoption of different measures of simplification.

#### 1.1.4 Value added

The ERDF offers the rare opportunity of a stable programming framework in which Managing Authorities can devise and fine-tune strategies adapted to both the local context and external circumstances. This was appreciated in countries and regions hit by the crisis, but also in more resilient and developed economies in times of generalised budgetary constraint. It is actually an important precondition making possible the realisation of what could possibly be **the most valuable contribution of ERDF**, i.e. **to trigger small incremental virtuous processes that policymakers can then steer and follow** over a reasonable timeframe, consolidating them, to ensure their sustainability.

Another related added value of the ERDF was that it offered an opportunity to conduct policy experiments (with differing degrees of risk). In a few cases experiments in terms of innovative tools and practices, such as, for example, the experience of Living Labs, the emphasis on social innovation or priorities on Key Enabling Technologies, were implemented thanks to good practices promoted at EU level and adopted at local level.

Most of all, **the ERDF can potentially play a decisive role in shaping the strategies implemented at national and regional levels by offering a well-defined set of priorities and strategic objectives** reflecting well-accepted and most recent state-of-the-art theories of change relating to SME competitiveness in the EU. This is well perceived by the Managing Authorities who actually have to struggle to align and justify their strategies along the Community guidelines.

However, evidence from the field showed no link between ambitious, but relatively homogenous, theories of change and concrete development at policy instrument level. This suggested that the former had a rhetorical dimension, which reflected a lack of thorough understanding of how specific territories should cope with the key challenges of the Lisbon strategy. While there was a crucial opportunity to provide the strategic stimulus and steer Cohesion Policy programmes, the role of ERDF was often perceived by Managing Authorities more as an institutional constraint that forced them away from actual local needs rather than an opportunity to bring in a strategic advisor and partner supporting them in designing and implementing innovative and ambitious strategies.

Overall, it seems that the strategic role that the ERDF could potentially have played was hampered by some resistance from the Managing Authorities or by their incapacity to translate strategic indications into a realistic and coherent set of regional strategies adapted to local context. In the current programming period, the European Commission has the opportunity of scaling up its downstream support in the selection of a coherent set of policy instruments and suggesting more effective tools and practices.

### *6.2 Policy implications*

#### 1.1.5 SME support requires context-specific theories of change

As stated above, one major weakness of ERDF interventions in support of SMEs was the fragility of the programmes' strategic underpinnings. To remedy this, sound theories of change should underpin Operational Programmes. These theories of change should at the same time reflect the strategic goals defined at EU level, and be strongly tied to local specificities. Also, they suppose a clear understanding of how the ERDF matters, what its main value added can be, and under what conditions it works best.

The above analysis sheds light on the mechanisms whereby the ERDF can make a difference. Besides short/medium term economic effects on employment and/or competitiveness, the added value of ERDF is in qualitative terms, in the form of incremental and cumulative behavioural changes eventually diffusing both in width and depth, and potentially leading to deeper restructuring processes in the long term.

The realisation of behavioural change requires that targeted SMEs have the capabilities to trigger and nurture such processes of change. In other words, SMEs must be capable of repositioning themselves to gain competitiveness i.e. they should have the necessary *absorptive capacity* to respond to the policy stimuli. The level of absorptive capacity of SMEs is in part related to the sectoral origin of the SMEs concerned, but it is not automatic. Also, whether SMEs have more or less absorptive capacity is not necessarily related to the fact that their motor of development is based on innovation or on broader growth factors.

It is, therefore, necessary to go beyond sectors (defined in nomenclatures such as NACE) as a traditional policy reference, and look at alternative frameworks for policy action, like, for example, ecosystems. **An ingenious *targeting strategy* must be adopted that extends beyond the usual mechanical selection processes based on size, sector or accounting criteria and refers, instead, to SMEs' absorptive capacity and embeddedness in the local context**. In this respect, the Smart Specialisation approach promoted in the current programming period (2014-2020) offers concrete opportunities to develop the place-based dimension of ERDF strategies.

This is useful to reconcile the trade-off between what seem to be two extreme strategic options that ERDF strategies should overcome, i.e. concentrating on a few capable SMEs vs. reaching large sets of less competitive SMEs (it was indeed seen that the solution adopted by policymakers to try and eschew this contradiction by pursuing the two objectives simultaneously was not effective and generally resulted in a dilution of resources).

It also extends an invitation to focus the ERDF on what it does best, i.e. the promotion of structural changes within SMEs. This should reflect the focus of the ERDF in order to maximise its potential added value, without attempting to address policy challenges (such as the credit crunch, the global economic downturn or safeguarding employment) extending far beyond its genuine remit. An interesting lesson, in this respect, is the fact that the ERDF was used to sustain strategic investments during the crisis even in less favoured areas, showing that a stabilisation and anti-cyclical strategy was not the only option for the ERDF. Missing the opportunities of more selective strategies could have high opportunity costs.

At the same time, improvements are called for concerning the contribution of ERDF to issues more in line with its *raison d'être* like, for example, the promotion of industry-science partnerships.

#### 1.1.6 Theories of change must translate into a coherent set of selective and result-oriented policy instruments

Once a clear theory of change addressing well-defined beneficiary SMEs is adopted, it needs to be translated into a coherent set and well calibrated number of policy instruments. Such coherence must be internal (with a few well-designed policy instruments), but also external, with ERDF policy instruments complementing existing national and regional measures, or replacing missing ones.

**The findings suggest moving away from the "menu" or toolbox approach so widely used in the OPs reviewed, and concentrating funding on a limited set of policy instruments that are most likely to trigger behavioural change**. For this, policy instruments must be carefully tailored to the needs of SMEs and to the circumstances in which they are applied; and they must be clear about the desired behavioural changes. Policy instruments must be consistently aligned with the theory of change expected to underpin them and be selective, i.e. both targeted SMEs and the objectives pursued must be identified and clearly formulated.

The result orientation expected to characterise the current programming period (2014-2020) goes in this direction; it should apply at both programme and policy instrument levels. Different approaches can be taken to adapt policy instruments to the specificity of targeted SMEs i.e. to "customise" policy instruments and to have a strong result-orientation by conditioning fund disbursement to clear commitments in terms of results.

In more developed regional innovation systems, with higher levels of social capital, selective policy instruments can apply in the context of "ecosystems" and maximise their spill-over effects. In less developed regional innovation systems, social capital is lower, ecosystems are underdeveloped or nascent and spill-overs more limited. Here, critical size at project-level is decisive. In any case, it is crucial that the set of policy instruments be conceived as a long-

term process of incremental movements towards specific and well-defined trajectories of change.

#### 1.1.7 A risk-taking attitude should be encouraged

The evaluation showed that the ERDF can be a laboratory for experimenting and developing innovative tools and practices. An articulated strategy of relatively large-scale experiments around the implementation of less generic/more selective policy instruments should develop in order to seize this potential. A successful policy instrument under ERDF should enable policymakers to learn from experience and to replicate the achievement. The ERDF would thus be at the service of a "new industrial policy" based on a process of trial and error.[66]

This supposes the adoption of a risk-taking attitude since selectivity implies that choices be made – and choices can be wrong (by definition an experiment can fail). Of course, the risk is eventually closely associated with the nature of the experimentation, i.e. while experimenting is inherently risky; some experiments are riskier than others. This is important for lagging behind regions where true risk is less affordable (due to higher budgets, higher dependence on ERDF, lower fund absorption capacity and related pressure to keep the spending process on track, etc.). The important finding in this respect was that such experimental approaches were possible not only in more advanced settings, but also in less favoured regions. It should be made clear from the beginning in which territories these experiments need to be conducted under safe conditions and where, instead, the associated risk can be coped with.

In this way, **the ERDF could be a trendsetter, financing pilot-schemes and large-scale field experiments, and promoting riskier, but also more innovative, interventions rather than replicating well-established and generic mainstream national schemes**. Seen from this perspective, there is a wide scope for the ERDF to play a pivotal role in shaping regional, national and EU industrial policies.

#### 1.1.8 The important role of intermediaries and of an appropriate governance system

It was seen that intermediaries and implementing bodies played a crucial role in the design and implementation process as they had local knowledge of the SME fabric and of the specific socio-economic context, as well as the ability to ensure a wide territorial reach. They were able to contribute to implementing selective strategies by organising the effective combination of policy instruments mentioned above, or by providing the close face-to-face and day-to-day contact and follow up that was so needed by the (smallest) SMEs. They were also able to ensure that the proper targeting and the accompanying approach actually materialised in a continuous and open dialogue leading to co-design and prioritisation of selected thematic fields.

Hence, **a more forceful recourse to intermediaries with an in-depth understanding of SMEs strengths and weaknesses could be a solution to help steer and implement a more strategic and place-based approach to ERDF strategy**. Intermediaries like cluster managers could be at the centre of local ecosystems, which they could animate and steer. This configuration could be particularly effective in securing multiplier effects resulting from the implementation of selective policy instruments. A minor policy input could have significant reach because SMEs are receptive, and spill-overs relay the positive effects.

In order to do this, intermediaries need strong competences and appropriate resources to carry out the task. Also, this requires that a structured governance system be in place, based on the principle of subsidiarity. In this system, the Managing Authority must be able to safely delegate responsibility to intermediaries without incurring the risk that the latter follow an agenda unaligned with the overall regional strategy, and without relinquishing its rights in terms of knowledge. An effective information system must indeed be in place to diffuse the

[66] See for example D. Rodrik 2004 Industrial policy for the 21st century, Paper prepared for Unido.

recorded information on activities and performance that was required of intermediaries (see following point). All this raises the issue of the *selection* of such intermediaries.

#### 1.1.9 Monitoring and evaluation

Monitoring and evaluation systems need provide the necessary information basis required for policy adjustments and redesign and, beyond this, for *policy learning*. An effective monitoring and evaluation system should be firmly based on the theory of change underlying a programme and organised at different levels. For this to be useful in a learning perspective, it should include:

- a theory of change at programme level aligning the relevance of the intervention with the intended policy goals;
- intervention logics at the micro-level of individual policy instruments, validated and assessed within the wider policy framework.

Evidence collected from the case studies calls for the development of new measurement systems, suitable for reporting and assessing the implementation and level of achievement of policy instruments. Over the 2007-2013 programming period ERDF interventions addressed to SMEs operated in a measurement paradigm where a strong political narrative relied on an accounting system related to the number of assisted SMEs, ex-ante declarations of expected process or product innovation, or on standard indicators of achievement like "jobs created", which tended to oversimplify the logic of ERDF functioning. In contrast, **the choice of indicators should be aligned with what could be the added value of ERDF** as identified in this study, i.e. in terms of enhanced competitiveness, but also and, more importantly, of behavioural change. The emphasis on experimentation and learning requires indicators to reflect more qualitative effects such as the opinions and perceptions of beneficiary SMEs, for example, in terms of trust, confidence, openness, learning and preparedness. This puts observation at the firm level at the centre of the monitoring and evaluation system.

**Greater use should be made of already available, but unexploited, data at firm-level**. It is rather striking, for example, that monitoring systems do not systematically collect and use the extensive and often quite rich information bases about the characteristics of the assisted SMEs that are available within intermediaries and implementing bodies. The increasingly widespread use of computer-assisted systems and procedures for application, selection and payment activities provides a relatively easily available wealth of information. In the same vein, on-site visits to firms and follow ups are crucial for gathering useful information about the effects of implemented instruments on the firms' performances and behaviour.

It is also important that monitoring systems better account for possibly more complex governance systems that are less centralised around Managing Authorities and that grant intermediaries a privileged role. The identification of indirect beneficiary SMEs, which was widely lacking over the 2007-2013 period as documented in some case studies (Denmark and Île-de-France, in particular), should be remedied. This could also be an opportunity to disentangle Managing Authorities from a potential conflict of interest, since the same body both selects the beneficiaries and collects evidence from them.

It should be acknowledged that while monitoring systems are suitable for reporting on output, it is necessary to perform *ad hoc* evaluation studies to gather solid evidence on results and impact. Over the 2007-2013 period, ex-post or even *in itinere* evaluation studies were at the discretion of individual Managing Authorities, and were *de facto* only occasionally performed on selected instruments or initiatives. In addition, the quality of the evaluation studies was often questionable.

Evaluation studies should be performed at least on the most relevant instruments in terms of funds absorption and follow strict international methodological standards. Evaluation studies on the full set of policy instruments implemented to support SMEs innovation and growth could also provide useful hints on aggregate effects at programme level.

The systematic use of direct surveys to beneficiaries and the use of information from official databases containing accounting data at firm level could be promoted, as well as the use of control groups (counterfactual analyses). To fully grasp the information potential of such tools and to enhance policy learning, an estimation of quantitative net effects on economic performance (typically gathered through counterfactual evaluations) should be complemented by a more qualitative assessment of the mechanisms and conditions for success. The use and exploration of innovative, yet solid, methodologies to assess survey results should be promoted. The use of a Bayesian Network Analysis proved to be particularly useful in this respect, especially when combined with additional econometric exercises.

Finally, specific arrangements could enhance the learning dimension of Monitoring and Evaluation. For example, learning by comparing could be promoted and benchmarking across regions in the EU could be built into the policy design from the beginning, through twinned monitoring mechanisms.

The Commission published a useful guidance document on monitoring and evaluation over the 2014-2020 programming period, tackling many of the issues raised above (European Commission, 2014e). The reference to the intervention logic as a starting point, the establishment of a performance framework with milestones and targets, the definition of the role of output and result indicators and the requirement to adopt evaluation plans at the start of the programming period are examples of measures expected to improve the overall setting for monitoring and evaluating ERDF achievements.

**ANNEXES**

## ANNEX I. LIST OF THE SAMPLE OF 50 OPERATIONAL PROGRAMMES

| # | OP Name | Country | OP Code | OP label | Cohesion Policy Objective | NUTS level |
|---|---|---|---|---|---|---|
| 1 | Burgenland 2007-2013: Ziel Konvergenz/Phasing Out / EFRE | AT | 2007AT161PO001 | AT - Burgenland | CONV | 2 |
| 2 | Steiermark 2007-2013: Ziel Regionale Wettbewerbsfähigkeit & Beschäftigung / EFRE | AT | 2007AT162PO007 | AT - Steiermark | COMP | 2 |
| 3 | 'Convergence' Hainaut - FEDER | BE | 2007BE161PO001 | BE - Hainaut | CONV | 3 |
| 4 | Development of the Competitiveness of the Bulgarian Economy | BG | 2007BG161PO003 | BG - Bulgaria | CONV | 0 |
| 5 | Podnikání a inovace | CZ | 2007CZ161PO004 | CZ - Czech Republic (Innov) | CONV | 0 |
| 6 | Výzkum a vývoj pro inovace | CZ | 2007CZ161PO012 | CZ - Czech Republic (R&D) | CONV | 0 |
| 7 | EFRE Brandenburg 2007-2013 | DE | 2007DE161PO002 | DE - Brandenburg | CONV | 1 |
| 8 | EFRE Sachsen 2007-2013 | DE | 2007DE161PO004 | DE - Sachsen | CONV | 1 |
| 9 | EFRE Sachsen-Anhalt 2007-2013 | DE | 2007DE161PO007 | DE - Sachsen-Anhalt | CONV | 1 |
| 10 | EFRE Berlin 2007-2013 | DE | 2007DE162PO004 | DE - Berlin | COMP | 1 |
| 11 | EFRE Nordrhein-Westfalen 2007-2013 | DE | 2007DE162PO007 | DE - Nordrhein-Westfalen | COMP | 1 |
| 12 | Innovation og Viden | DK | 2007DK162PO001 | DK - Denmark | COMP | 0 |
| 13 | the Development of Economic Environment | EE | 2007EE161PO001 | EE - Estonia | CONV | 0 |
| 14 | FEDER de Andalucía | ES | 2007ES161PO008 | ES - Andalucía | CONV | 2 |
| 15 | FEDER de Castile and León | ES | 2007ES162PO009 | ES - Castile and León | COMP | 2 |
| 16 | FEDER de la Comunidad Valenciana | ES | 2007ES162PO010 | ES - Comunidad Valenciana | COMP | 2 |
| 17 | FEDER de Investigación, Desarrollo e innovación por y para el beneficio de las empresas - Fondo Technologico | ES | 2007ES16UPO001 | ES - Spain (TF) | Multi-objective | Combination of NUTS 2 |
| 18 | FEDER de Economía basada en el Conocimiento | ES | 2007ES16UPO003 | ES - Spain (Know.) | Multi-objective | Combination of NUTS 2 |
| 19 | Pohjois-Suomen EAKR-toimenpideohjelma 2007-2013 | FI | 2007FI162PO002 | FI - North Finland | COMP | 2 |
| 20 | FEDER AQUITAINE | FR | 2007FR162PO001 | FR - Aquitaine | COMP | 2 |
| 21 | FEDER ÎLE-DE-FRANCE | FR | 2007FR162PO012 | FR - Île-de-France | COMP | 2 |
| 22 | FEDER PROVENCE ALPES COTE D´AZUR | FR | 2007FR162PO020 | FR - Provence-Alpes-Côte d'Azur | COMP | 2 |
| 23 | FEDER MIDI-PYRENEES | FR | 2007FR162PO021 | FR - Midi-Pyrénées | COMP | 2 |
| 24 | Ανταγωνιστικότητα και Επιχειρηματικότητα | GR | 2007GR161PO001 | EL - Greece (no Attiki) | CONV | 0 |
| 25 | Αττική | GR | 2007GR161PO006 | EL - Attiki | CONV | 2 |
| 26 | Economic Development Operational Programme | HU | 2007HU161PO001 | HU - Hungary | CONV | 0 |
| 27 | Central Hungary | HU | 2007HU162PO001 | HU - Central Hungary | COMP | 2 |
| 28 | Ricerca e competitivita' | IT | 2007IT161PO006 | IT - Convergence | CONV | Combination of NUTS 2 |
| 29 | FESR Puglia 2007-2013 | IT | 2007IT161PO010 | IT - Puglia | CONV | 2 |
| 30 | Regione Piemonte FESR | IT | 2007IT162PO011 | IT - Piemonte | COMP | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 31 | Veneto FESR | IT | 2007IT162PO015 | IT - Veneto | COMP | 2 |
| 32 | 2007-2013 m. Ekonomikos augimo veiksmų programa | LT | 2007LT161PO002 | LT - Lithuania | CONV | 0 |
| 33 | Entrepreneurship and Innovations | LV | 2007LV161PO001 | LV - Latvia | CONV | 0 |
| 34 | West 2007-2013 | NL | 2007NL162PO002 | NL - West | COMP | Combination of NUTS 2 |
| 35 | Innowacyjna Gospodarka, 2007-2013 | PL | 2007PL161PO001 | PL - Poland | CONV | 0 |
| 36 | Regionalny Program Operacyjny Województwa Mazowieckiego | PL | 2007PL161PO011 | PL - Mazowieckie | CONV | 2 |
| 37 | Rozwój Polski Wschodniej 2007-2013 | PL | 2007PL161PO003 | PL - Eastern Poland | CONV | Combination of NUTS2 |
| 38 | Województwa Wielkopolskiego | PL | 2007PL161PO017 | PL - Wielkopolskie | CONV | 2 |
| 39 | Factores de Competitividade 2007-2013 | PT | 2007PT161PO001 | PT - Portugal | CONV | 0 |
| 40 | Regional do Norte 2007-2013 | PT | 2007PT161PO002 | PT - Norte | CONV | 2 |
| 41 | Regional Operational Programme | RO | 2007RO161PO001 | RO - Romania (ROP) | CONV | 0 |
| 42 | Sectoral Operational Programme Increase of Economic Competitiveness | RO | 2007RO161PO002 | RO - Romania (Compet.) | CONV | 0 |
| 43 | krepitve regionalnih razvojnih potencialov za obdobje 2007 - 2013 | SI | 2007SI161PO001 | SL - Slovenia | CONV | 0 |
| 44 | Competitiveness and Economic Growth | SK | 2007SK161PO006 | SK - Slovakia (Compet.) | CONV | 0 |
| 45 | Research and Development | SK | 2007SK16UPO001 | SK - Slovakia (R&D) | Multi-objective | 0 |
| 46 | Norra Mellansverige | SE | 2007SE162PO006 | SE - Norra Mellansverige | COMP | 2 |
| 47 | Övre Norrland | SE | 2007SE162PO008 | SE - Övre Norrland | COMP | 2 |
| 48 | Highlands and Islands of Scotland ERDF phasing out Convergence programme | UK | 2007UK161PO001 | UK - Highlands and Islands | CONV | 2 |
| 49 | West Wales and the Valleys ERDF Convergence programme | UK | 2007UK161PO002 | UK - West Wales and The Valleys | CONV | 2 |
| 50 | Yorkshire and Humberside England ERDF Regional Competitiveness and Employment programme | UK | 2007UK162PO009 | UK - Yorkshire and the Humber | COMP | 1 |

## ANNEX II. DETAILS ON THE POLICY INSTRUMENST IDENTIFIED IN THE 50 OPERATIONAL PROGRAMMES

| OP label | OP code | Number of policy instruments identified | Number of policy instruments for which paid amount is available | Share of policy instruments with paid amount data available | Total paid amount for the policy instruments (Million Euro) | Average paid amount per policy instrument (Million Euro) | Minimum paid amount per policy instrument (Million Euro) | Maximum paid amount per policy instrument (Million Euro) |
|---|---|---|---|---|---|---|---|---|
| AT - Burgenland | 2007AT161PO001 | 9 | 9 | 100% | 492 | 55 | 0 | 190 |
| AT - Styria | 2007AT162PO007 | 8 | 8 | 100% | 947 | 118 | 6 | 466 |
| BE - Hainaut | 2007BE161PO001 | 18 | 9 | 50% | 215 | 27 | 0 | 135 |
| BG - Bulgaria | 2007BG161PO003 | 14 | 14 | 100% | 518 | 37 | 0 | 349 |
| CZ - Czech Republic (Innov) | 2007CZ161PO004 | 14 | 14 | 100% | 1,538 | 110 | 3 | 347 |
| CZ - Czech Republic (R&D) | 2007CZ161PO012 | 2 | 2 | 100% | 848 | 424 | 333 | 515 |
| DE - Berlin | 2007DE162PO004 | 8 | 11 | 100% | 289 | 26 | 1 | 58 |
| DE - Brandenburg | 2007DE161PO002 | 8 | 10 | 91% | 369 | 37 | 3 | 262 |
| DE - North Rhine-Westphalia | 2007DE162PO007 | 9 | 13 | 87% | - | - | - | - |
| DE - Saxony | 2007DE161PO004 | 6 | 10 | 100% | 1,223 | 122 | 11 | 580 |
| DE - Saxony-Anhalt | 2007DE161PO007 | 8 | 10 | 83% | 586 | 59 | 3 | 395 |
| DK - Denmark | 2007DK162PO001 | 9 | 7 | 78% | 75 | 11 | 2 | 34 |
| EE - Estonia | 2007EE161PO001 | 7 | 6 | 86% | 128 | 21 | 2 | 58 |
| EL - Attiki | 2007GR161PO006 | 29 | 28 | 97% | 246 | 9 | 0 | 61 |
| EL - Greece (no Attiki) | 2007GR161PO001 | 25 | 25 | 100% | 900 | 39 | 0 | 736 |
| ES - Andalucía | 2007ES161PO008 | 40 | 24 | 60% | 346 | 15 | 0 | 143 |
| ES - Castile and León | 2007ES162PO009 | 23 | 17 | 74% | 471 | 29 | 0 | 203 |
| ES - Comunidad Valenciana | 2007ES162PO010 | 24 | 16 | 67% | 127 | 8 | 0 | 46 |
| ES - Spain (Know.) | 2007ES16UPO003 | 1 | 1 | 100% | 9 | 9 | 9 | 9 |
| ES - Spain (TF) | 2007ES16UPO001 | 22 | 19 | 86% | 1,294 | 76 | 0 | 384 |
| FI - North Finland | 2007FI162PO002 | 8 | 8 | 100% | 413 | 52 | 3 | 180 |
| FR - Aquitaine | 2007FR162PO001 | 11 | 10 | 91% | 94 | 9 | 1 | 32 |
| FR - Île-de-France | 2007FR162PO012 | 12 | 14 | 100% | 124 | 9 | 1 | 42 |
| FR - Midi-Pyrénées | 2007FR162PO021 | 14 | 1 | 7% | 5 | 5 | 5 | 5 |
| FR - Provence-Alpes-Côte d'Azur | 2007FR162PO020 | 14 | 4 | 29% | 81 | 20 | 7 | 32 |
| HU - Central Hungary | 2007HU162PO001 | 16 | 16 | 100% | 443 | 28 | 3 | 109 |
| HU - Hungary | 2007HU161PO001 | 15 | 15 | 100% | 2,404 | 160 | 2 | 757 |
| IT - Apulia | 2007IT161PO010 | 22 | 17 | 77% | 379 | 22 | 0 | 100 |
| IT - Convergence | 2007IT161PO006 | 15 | 14 | 93% | 525 | 37 | 0 | 170 |
| IT - Piedmont | 2007IT162PO011 | 10 | 6 | 60% | 456 | 76 | 9 | 180 |
| IT - Veneto | 2007IT162PO015 | 12 | 12 | 100% | 214 | 18 | 1 | 64 |
| LT - Lithuania | 2007LT161PO002 | 19 | 19 | 100% | 576 | 30 | 1 | 229 |
| LV - Latvia | 2007LV161PO001 | 9 | 9 | 100% | 164 | 18 | 0 | 87 |
| NL - West | 2007NL162PO002 | 6 | 4 | 67% | 8 | 2 | 1 | 4 |
| PL - Eastern Poland | 2007PL161PO003 | 7 | 2 | 29% | 44 | 22 | 8 | 36 |
| PL - Mazowieckie | 2007PL161PO011 | 12 | 10 | 83% | 219 | 22 | 2 | 113 |
| PL - Poland | 2007PL161PO001 | 26 | 19 | 73% | 3,741 | 197 | 7 | 1,142 |
| PL - Wielkopolskie | 2007PL161PO017 | 13 | 13 | 100% | 289 | 22 | 0 | 99 |
| PT - Norte | 2007PT161PO002 | 10 | 10 | 100% | 327 | 33 | 1 | 186 |
| PT - Portugal | 2007PT161PO001 | 14 | 14 | 100% | 1,395 | 100 | 1 | 775 |
| RO - Romania (Compet.) | 2007RO161PO002 | 17 | 17 | 100% | 819 | 48 | 0 | 367 |
| RO - Romania (ROP) | 2007RO161PO001 | 3 | 3 | 100% | 269 | 90 | 5 | 186 |
| SE - Norra Mellansverige | 2007SE162PO006 | 10 | 10 | 100% | 117 | 12 | 0 | 48 |
| SE - Övre Norrland | 2007SE162PO008 | 12 | 12 | 100% | 143 | 12 | 1 | 40 |
| SK - Slovakia (Compet.) | 2007SK161PO006 | 10 | 10 | 100% | 647 | 65 | 1 | 282 |
| SK - Slovakia (R&D) | 2007SK16UPO001 | 5 | 4 | 80% | 154 | 38 | 15 | 78 |
| SL - Slovenia | 2007SI161PO001 | 13 | 13 | 100% | 681 | 52 | 2 | 168 |
| UK - Highlands and Islands | 2007UK161PO001 | 8 | 6 | 75% | 137 | 23 | 0 | 75 |

| OP label | OP code | Number of policy instruments identified | Number of policy instruments for which paid amount is available | Share of policy instruments with paid amount data available | Total paid amount for the policy instruments (Million Euro) | Average paid amount per policy instrument (Million Euro) | Minimum paid amount per policy instrument (Million Euro) | Maximum paid amount per policy instrument (Million Euro) |
|---|---|---|---|---|---|---|---|---|
| UK - West Wales and The Valleys | 2007UK161PO002 | 14 | 14 | 100% | 603 | 43 | 3 | 129 |
| UK - Yorkshire and the Humber | 2007UK162PO009 | 7 | 7 | 100% | 672 | 96 | 8 | 265 |
| **Total** | | **670** | **566** | **84%** | **26,946** | **48.2** | **0** | **1,142** |

Source: CSIL.

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